NATIONAL PLANNING COMMITTEE SERIES

(Report of the Sub-Committee)

TRANSPORT SERVICES

Chairman

Dr. D. R. GADGIL

Secretary

Dr. F. P. ANTIA

Edited by

Prof. K. T. SHAH

Hon. Gen. Secretary

NATIONAL PLANNING COMMITTEE

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NATIONAL PLANNING, ITS PRINCIPLES & ADMINISTRATION — *K. T. Shah*

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To

All Those

MEMBERS OF THE NATIONAL PLANNING COMMITTEE

and of

Its Various Sub-Committees

A TRIBUTE OF APPRECIATION

प्रारब्धमुत्तमजना न परित्यजन्ति

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PREFACE

The National Planning Committee, appointed in 1938, began its work early in 1939. After defining the nature of a National Plan, and determining the nature and scope of the work entrusted to them, the Committee issued an elaborate and comprehensive Questionnaire which was subsequently supplemented by specific details. Twenty-nine Sub-Committees, formed into eight groups, were set up with special terms of reference to deal with all parts and aspects of the national life and work in accordance with a predetermined Plan.

After some unavoidable delay in getting replies to the Questionnaire, the Sub-Committees began their work, and submitted Reports,—some of them Final, some Interim,—which were considered at the Plenary Sessions of the Parent Committee in 1940. Towards the end of that year the Chairman, Pandit Jawaharlal Nehru, was arrested and sentenced to a long term of imprisonment, during which the work of the Committee had necessarily to be suspended.

On his release a year later, hope revived for an intensive resumption of the Committee's work. But the outbreak of war with Japan, the threat to India's own safety, and the hectic march of political events, rendered it impossible to devote any attention to such work at that time. It, therefore, inevitably went into cold storage once again; and remained for the duration of the war.

When at last the War seemed nearing its end, Pandit Jawaharlal Nehru with other leaders was released. The moment seemed again opportune to resume the work of

the Planning Committee. Meetings of that Body were held in September and November 1945, when certain more urgent questions, already included in the programme of the National Planning Committee, were given a special precedence. A Priority Committee was appointed to report upon them. Changes and developments occurring during the War had also to be taken into account; and another Committee was appointed to review the general instructions, given six years earlier to the Sub-Committees. Revised instructions were issued to them following the Report of this Sub-Committee; and the Chairmen and Secretaries of the several Sub-Committees were once again requested to revise and bring up-to-date such of the Reports as had already been submitted—either as final or interim—while those that had not submitted any reports at all were asked to do so at an early date.

As a result, many of the Sub-Committees which had not reported, or had made only an Interim Report, put in their Reports, or finalised them. The Parent Committee has had no chance to review them, and pass resolutions on the same. But the documents are, by themselves, of sufficient value, prepared as they are by experts in each case, to be included in this Series.

The following Table shows the condition of the Sub-Committees' work, and the stage to which the Planning Committee had reached in connection with them.

Serial No.	Name of the Sub-Committee.	Final Report		Interim Report		No Reports
		N.P.C. Resolutions	Not considered by N.P.C.	N.P.C. Resolution	Not considered by the N.P.C.	
Group I	**Agriculture & other Sources of Primary Production**	Handbook Pp.		Handbook Pp.		
1.	Rural Marketing and Finance	97-99				
2.	River Training and Irrigation Part I	83-85				
	,, ,, ,, Part II	113-115				
3.	Soil Conservation and Afforestation	115-119				
4.	Land Policy and Agriculture			139-141		
5.	Animal Husbandry and Dairying	87-89				
6.	Crop Planning and Production				do.	do.
7.	Horticulture	102-103				
8.	Fisheries		do.			
Group II	**Industries or Secondary Sources of Production**					
1.	Rural and Cottage Industries					
2.	Power and Fuel		do.			
3.	Chemicals					do.
4.	Mining and Metallurgy			77-79		
5.	Engineering Industries	75-77		130-133		
6.	Manufacturing Industries		do.			
7.	Industries connected with Scientific Instruments		do.			
Group III	**Human Factor**					
1.	Labour	89-92				
2.	Population	85-87				
Group IV	**Exchange and Finance**					
1.	Trade					
2.	Public Finance			130		do.
3.	Currency and Banking			122-126		
4.	Insurance			93-95		
Group V	**Public Utilities**					
1.	Transport			95-97		
2.	Communication	126-129		120-122		
Group VI	**Social Services-Health and Housing**					
1.	National Housing	99-100				do.
2.	National Health					
Group VII	**Education**					
1.	General Education			133-139		
2.	Technical Education				do.	
Group VIII	**Woman's Role in Planned Economy**	154-160				

To sum up, fourteen Sub-Committees had made final reports, of which ten have been considered, and Resolutions taken upon them, by the National Planning Committee. Twelve more have presented Interim Reports, of which nine have been considered by the Planning Committee, with Resolutions thereon, while three Sub-Committees have not yet presented any report on the reference made to them.

The idea that all this material, gathered together with the help of some of the best brains in India in the several departments of our national life, should be printed and published was before the Committee from the start. But the interruption caused by the war prevented its realisation. It was once again mooted in 1941; but the moment was not deemed ripe then for such action, partly because the leading spirits in almost every one of the Sub-Committees were unable to devote time and labour to bring their Reports up-to-date; and partly also because war-time restrictions or shortages had made scarcer than ever before the statistics and other facts, which particular sub-committees would need, to bring their work up-to-date. The war-time needs of Government had attracted several of them to work on Government Bodies, Panels, or Committees. For all these reasons it was deemed undesirable that material of this character—valuable as it must be—should be put out in an incomplete, inchoate, obsolete form, which may reflect unfavourably upon Indian capacity for such tasks.

The last four years of the War were thus a period of suspended animation for the National Planning Committee. Even after the end of the war, it has not been feasible, for obvious reasons, for the Planning Committee to resume its work and finalise decisions. Continuous sessions of that body are indispensable for considering and taking decisions on the Sub-Committee reports presented since 1940, and putting all the material into shape, ready for publication, not to mention making its own Report; but the political situation in the country made it impossible. Other conditions, however, are somewhat more favourable than in 1938-39, when the Central Government of the country were all but openly hostile to such attempts. Lest, however, the momentary difficulties make for needless further delay, it was thought advisable by the Chairman and the undersigned that no more time should be lost in putting this material before the Public. Following this advice, it is now proposed to bring out a complete Series of the National Planning Committee's Sub-Committee Reports, which will

serve as appendices to the Parent Committee's own Report. The Plan of the proposed enterprise is briefly summarised below.

Every Sub-Committee's Report, which is in a final form and on which the National Planning Committee has itself taken resolutions, will be edited and published, with an Introduction assigning their due importance to the suggestions and recommendations contained in that particular report, its proper place in the over-all National Plan; and following it up, wherever necessary, by a kind of Epilogue, summarising the developments that have taken place during the seven years, during which the work of the Planning Committee had been in suspension.

Those Reports, again, which, though in a final form, have not yet been considered, and no resolutions taken thereon, by the Planning Committee, will also be included in the Series in the form in which they were submitted, with such Introduction and Epilogue to each as may be deemed appropriate. And the same treatment will be applied to Reports which are 'Ad Interim', whether or not the Parent Committee has expressed any opinion on the same. They will be finalised, wherever possible, in the office, with such aid as the Chairman or Secretary of the Sub-Committee may be good enough to render. Sub-Committees finally, which have not submitted any Report at all, —they are very few,—will also find their work similarly dealt with. The essence, in fine, of the scheme is that no avoidable delay will now be suffered to keep the National Planning Committee's work from the public.

Both the Introduction and the Epilogue will be supplied by the undersigned, who would naturally be grateful for such help as he may receive from the personnel of each Sub-Committee concerned. The purpose of these additions is, as already stated, to assign its true place to each such work in the over-all Plan; and to bring up the material in each Report to date, wherever possible.

Not every Sub-Committee's Report is sufficiently large to make, more or less, a volume by itself, of uniform size, for this Series. In such cases two or more Reports will be combined, so as to maintain uniformity of size, get-up, and presentation of the material. The various Reports, it may be added, would not be taken in the order of the classification or grouping originally given by the Planning Commit-

tee; nor even of what may be called the intrinsic importance of each subject.

In view of the varying stages at which the several Reports are, for reasons of convenience, it has been thought advisable to take up for printing first those which are final, and on which the Planning Committee has pronounced some resolutions. Priting arrangements have been made with more than one Press, so that two or three Reports may be taken simultaneously and published as soon as possible so that the entire Series may be completed in the course of the year.

Two other Sub-Committes, not included in the list of Sub-Committees given above, were assigned special tasks of (1) preparing the basic ideas of National Planning; and (2) outlining the administrative machinery deemed appropriate for carrying out the Plan. These were unable to function for reasons already explained. The present writer has, however, in his personal capacity, the entirely on his own responsibility, published the "Principles of Planning" which attempt to outline the fundamental aims and ideals of a National Plan. This remains to be considered by the Planning Committee. Similarly, he has also attempted to sketch an administrative machinery and arrangements necessary to give effect to the Plan, when at last it is formulated, and put into execution. Notwithstanding that these two are outside the Scheme outlined in this Preface, they are mentioned to round up the general picture of the arrangements made for publication of the entire work up-to-date of the National Planning Committee and its several Sub-Committees.

The several volumes of Sub-Committee Reports, when published, will be treated as so many appendices to the Report of the parent body, the National Planning Committee. It is impossible to say when that Committee, as a whole, will be able to hold continuous sessions, review and resolve upon Sub-Committee Reports which have not yet been considered, and lay down their basic ideas and governing principles for an all over Plan, applicable to the country, including all the facts of its life and all items making up the welfare of its people.

The disturbed conditions all over the country, and the Labour unrest that has followed the end of the War has caused unavoidable delays in priting and publishing the

several volumes in the Series, which, it is hoped, will be excused.

In the end, a word of acknowledgment is necessary to put on record the aid received by the Editor in the preparation and publication of this Series. All those who are associated in the task,—members of the Parent Committee, or as Chairmen, Secretaries or Members of the various Sub-Committee,—have laboured wholly, honorarily, and consistently striven to give the best that lay in them for the service of the country. Almost all Provincial Governments and some States,—the latter twice in some cases,—have made contributions towards the expenses of this office, which have been acknowledged and accounted for in the Handbooks of the Planning Committee, published earlier. Suitable appreciation of these will be expressed when the Parent Committee makes its own Report. At almost the end of its task, the expenditure needed to edit, compile, and otherwise prepare for the Press, the several Reports, has been financed by a Loan by Messrs. Tata Sons Ltd., which, even when repaid, will not diminish the value of the timely aid, nor the sense of gratitude felt by he undersigned.

Bombay, 1st July 1947. K. T. Shah.

Note:—In the Scheme of this Series, originally given, more than one Report was intended to be included in one volume in some cases. The combinations indicated in the circular, of the 20th of June 1947, had had to be modified as the printing of several Reports proceeded.

When about half the volumes were printed, it was found that that scheme would not give a fairly uniform series. The new arrangement is given on the page facing the title page. Some changes have had to be made in that list e.g., the separation of the two Reports on Public Health and National Housing, intended to be in one volume, are now in separate volumes.

Conversely, only the two Reports on Animal Husbandry and Dairying and on Fisheries were intended to be combined. As now decided, the Report on Horticulture is also included in the same Volume.

Again, the original combination of the Report on Minning and Metallurgy with that on Engineering Industries has been modified. The latter now combined with the Report on Industries Connected with Scientific Instruments, which was originally meant to be a separate volume, while the former is to be by itself.

31st January, 1948. K. T. S.

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INTRODUCTION.

I. Terms of reference.

This sub-committee was appointed to deal with :—

(a) All forms of transport by road, rail, riverways, coastal and overseas shipping, as well as by air;

(b) their rates, fares and freight charges, with due regard to the development of industries and inland trade :

(c) the extension, improvement and increase of these facilities, with special reference to the construction of roads so as to link villages with markets and sub-divisional head-quarters throughout the year; and

(d) co-ordination of road, rail and river traffic.

II. Forms of Transport.

There are today at work in India all the forms of transport that history has known of in any country at any time. We have land transport by road by means of the human porter, the pack animal of which there is a large variety from the mule and the yak to the camel and the elephant; the railroad and the motor car.

(ii) In addition there is water-transport by river and canal wherever they are found; by coastal seas and ocean wave;

(iii) And in recent years there has grown a new form of transport by air, which is still almost entirely for passenger service or the carriage of mails and very precious cargo. But all these forms are not scientifically linked **inter se** to form a connected, co-ordinated, comprehensive net-work of Transport Service, to meet all the requirements of goods and passenger carriage, of mails and stores and troops in times of war, in the most economical manner possible.

If the various forms of transport are divided according to the kind of energy used as motive-power, they may be classified as under :

(i) Transport by human or animal (muscular) energy, and

(ii) by mechanical power.

If, on the other hand, the various forms of available transport service may be divided according to the nature of the vehicle used, the following classification would be interesting :—

A. (a) **Land or Road Transport**—In this will be included transport by human energy, or porters; (b) by pack animals like mules, donkeys, horses, bullocks, camels or elephants, which function in different regions where local conditions make them popular, and economical to use, (c) by country carts, as well as (d) by the modern system of automobile trucks and lorries, motor buses and coaches.

Rail-road transportation is relatively a recent development, though by its bulk and the volume of traffic carried, it occupies the premier place more important than, perhaps, the still more recent development of mechanised automobile traction by road. It would, therefore, be dealt with in a separate sub-section, by itself, in this introduction.

B. Next to Land Transport on road, by railway or automobile, is **Water Transport** which may again be divided into inland on rivers or canals; coastal, and overseas. The relative utility and economics of Inland Water Carriage have not met with the same attention as the part played by this means all through the history of transportation. Even the potentialities of inland water transport have yet to be considered and co-ordinated in the general national system, far more clearly than has been ever done in the past.

The development of water transport along the coastal seas, and that of ports and harbours to accommodate and minister to the needs of shipping are no recent growth. It has been all along in our history a most important form making a yeoman contribution to India's trade and commerce. In recent times this service has begun to attract more and more attention by the advent of mechanical transportation by water in the shape of steamers and motor vessels. The new forms of water vehicles, like the submarine, have yet to be developed in this country. They are, however, primarily of Naval or fighting value, and not so much of economic or commercial use; and so it is unnecessary to dwell at length upon that form in the system of national planning.

The latest form of **Transport Service is by air.** Aerial navigation came to this country only after World War I. Its development on the scale of a regular service can only be dated after 1930, when regular carriage of passengers and mails by air within the country began. Overseas Transportation by air had also commenced regular service about the same time, though not by Indian agency, but as part of foreign services operating through India on their Trans-Continental Airways.

As in the case of sea transportation by water, so in regard to air there is a very important military aspect in the development of Air Service. The very rapid growth and large scale operation today of air transportation must necessarily be said to be due almost entirely to the demands of the last war. Organisation of National Defence on an adequate scale would be impossible without the Air Arm. Civil Aviation growing up in recent times has thus an intimate connection with the Military side, though the air-craft used for commercial purposes are wholly different in design and equipment. The terminal facilities required for housing, servicing, and operating such aircraft on the civil side are likewise different from those on the military side. Its place and importance, however, in the commerce of the future and international co-operation, would grow no less certainly than the Defence value of this modern means of warfare.

All these forms of Transport as means of communication have been examined in another volume in this Series dealing with Communications proper. In this volume, therefore, they would be treated exclusively from the stand-point of transportation of goods and passengers, mails and stores.

All these are not used in the same manner everywhere equally. On the road or in surface transport, which is still the most commonly used medium, carrying the largest quantity of goods and passengers, we have all kinds of vehicles both ancient and modern, pack animals in our trackless areas as well as human porters on our mountain ranges. These forms of transport have grown without any plan, purpose or design making of them a single pattern, and a net-work of nation-wide service. Each has had its origin and use in accordance with the conditions of the local topography or regional economy; rather than to afford a pre-determined service. Nevertheless, each has

served its purpose in times past. With the growth, however, of modern forms of road transport, and the changes that are taking place in our national economy by the growth of modern industry, it would be most wasteful if these were not inter-related, and made into a composite whole for the entire country, in all its various forms.

In order, however, to gauge the capacity and potentiality of these various forms of Transport, and those which are yet to be developed, as also to co-relate these with the different demands of the different sectors of our national economy, planned and progressive, we shall consider in more detail, historically and otherwise, the several forms of transport, the quantitative use made of each so far as available statistics permit. Before doing so, however, it would be advisable to examine the place and function of the transport service in a country's national economy.

III. The Place and Function of Transport Service in National Economy.

Having considered the various forms of modern Transport Service in operation today in India, let us now examine the place and role of this service in an overall National Plan of the kind envisaged in this Series.

It must be, at the very outset, noted that Transport Service is not, by itself, productive of new wealth. It is only an adjunct or contributory service in the process of production. It does not create new material wealth, so as to add to the volume of the National Dividend, and improve the actual standard of living or means of satisfying human wants.

It is, however, a contributory factor, which by increasing the place-value of the produce raised, facilitates and, thereby gives an impetus to the increase of production, both quantitatively and qualitatively. If transport is unavailable or rudimentary, the producer will have to depend for the satisfaction of all his needs, more or less on his own efforts. His labour or energy being diffused over a number of acts, instead of being concentrated on one or a few items in which he may have special advantage, the aggregate result will be much smaller in value than if he had specialised. This is the foundation stone of the economic phenomenon called Division of Labour which is universally recognised as adding materially to the

volume and variety of production. A good, efficient Transport Service promotes the division of labour in space as between regions or countries. The old time economic system was necessarily based upon the ideal of local or village self-sufficiency, just because large-scale and rapid transport of the present day was unavailable. Production was almost entirely for use, and very little for exchange. Being limited to either human or animal energy, it was necessarily, very slow and costly to carry goods from place to place over long distances. The volume as well as the variety of production had needs to be very limited. As and when and where natural facilities for movement in bulk, like flowing waters, or the power of the wind for driving ships along the coastal or distant seas, were available, they were utilised for effecting transport of goods in large quantity. The volume of wealth exchanged was comparatively greater for such areas. Those, therefore, who could command such advantages were encouraged and able to produce more or in greater variety than their own immediate needs, required. The surplus or speciality they produced was bartered or exchanged for that portion of their own demand which they could not meet from their own production. Commerce grew out of these conditions of increasingly specialised production. Transport is thus an important ingredient or adjunct in the growth and ramifications of modern commerce, both internal and foreign, and, through that, of the entire economic organisation and activity today.

Because of Transport making this very important contribution to the economic system of our age, it has justly come to be regarded as amongst the leading Public Utilities, in which not only the owner or provider or operator of the service is concerned; but the community as a whole is most deeply concerned, and by which its aggregate economy is profoundly affected.

In an unplanned economy, however, there are many features of the working of the Transport Service which handicap it to such an extent that its fullest advantage cannot be taken; nor an immense degree of needless waste avoided. Thus, for example, the several forms of Transport mentioned above, which are working simultaneously, but not inter-connected as by a set purpose and design, are overlapping and so restrict their own utility, as well as reduce their own profit. The distribution and alloca-

tion of appropriate kind of traffic to the several forms or means of transport, has never been the direct concern of any common, central public authority. The entire service, its equipment and working, being hitherto a private enterprise operating entirely by the profit motive, the intervention of public authority was either thought unjustifiable, or limited only to such regulation as was meant to prevent avoidable accidents, to ensure regularity in service, to avoid unnecessary competition if it resulted in danger or loss to men and goods carried by such transporters. If it went further than this, it aimed at stipulation with the common carrier by the Government of the country in regard to the carriage of mails, stores or troops and war-like material, if and when that became necessary. All this service was, of course, duly paid for.

Even though the last mentioned contingency, viz. carriage of stores or troop for war-like purposes affected directly the safety of the country as a whole, its defence and maintenance as an independent unit, the use of public agency of the State to provide and maintain its own means of transport was of the most limited character. Roads, a common means of transport from time immemorial, and built by some form of public agency, were left either to private land-owners, or to local bodies to build or maintain in return for tolls. The national authority intervened only in so far as the regulation of traffic on the road, or prevention of accidents was concerned. Being public property, their use for the carriage of mails cannot be regarded as a form of state enterprise. The construction, dimensions, materials for building, care and maintenance or preservation of these roads—were, almost everywhere chaotic; and the intervention of the Central public authority was practically non-existent in all such matters.

Because of the absence of any Plan and co-relation as between the various forms of transport operating simultaneously in a country, and because these services were in private hands, they necessarily competed amongst themselves. Each tried to attract all available traffic for its own carrying. This competition may have resulted in a certain amount of economy or cheapness to the producer; and part of it may have been passed on to the consumer. But as competition increased, it revealed its own weakness and led to combination amongst carriers, especially after the development of modern forms, which tried to bring about a degree of systematisation and regularity in the

service. Much more, however, than this, they tried to eliminate competition amongst themselves by making up a monopoly, and so raising their ability to increase the cost of carriage for the benefit of the private owner of the Transport Service. This danger was to a large extent obviated because of the gains from ever increasing volume of business, which grew with the expansion in industry and trade which the more advanced countries brought. The carrier got his full share of this increase in prosperity, leading him also to perceive the advantage of lower rates to attract more than proportionately higher volume of traffic, and so obtain better gains for himself.

With the advent of modern mechanised forms of large-scale transport in bulk, the possibility of one man or a few associates providing the entire service, with all its equipment of vehicles, permanent way, traction power, and all the accessories of stations, sheds, hotels, refreshment rooms, ferries etc. became almost impossible. The association of a large number of persons providing the necessary capital by shares in a joint stock concern is almost coeval, in point of time, with the advent of railway transportation, as well as steam navigation on rivers and canals in such countries as France, Germany, United States or Britain, where before the coming of the Railway, they had made very extensive use of these natural highways, the rivers, and the net-work of canals built around them. But even with the introduction of these more economical, more rapid and much more centralised means of transport, the waste involved in overlapping service remained. All kinds of goods and all classes of passengers were sought to be carried by railways competing among themselves, by road and river. Competition in rates as well as in service amenities or comforts provided by these grew. The distribution of all available traffic, or allocation of appropriate lines to the most suitable form of the service to the particular business, was not even thought of. Those who had the governance of the countries concerned in their hands believed that the best interests of the community, collectively, or of the national economy would be served only by allowing free competition amongst these individualist, profit seeking suppliers of the several forms of Transportation. Accordingly they regarded any interference in the business of the carrier to be an unwarrantable, unnecessary, uneconomical use of the sovereign authority.

The function of the State being limited, under the prevailing philosophy, to the mere maintenance of internal peace, the operations of the individual, presumably seeking his own interest, and merely the interest of the community as a whole, no regulation by public authority interfered with the operations of the predatory instinct in competitive economy, even when, by a growing process of combination and consolidation, competition was replaced by monopoly.

It is only, therefore, with the advent of the automobile traction on the ordinary road, threatening renewed competition from an entirely unexpected angle, that the Railway monopoly of transport became endangered and the eyes of the public were opened to the necessity of proper co-ordination as between the competing means of private enterprise in road transport. The Railway had its own economies, and automobile transport had its as well. Into the details of these relative advantages it is unnecessary to go. Essentially the rail-road was very costly in construction and maintenance, with often changing equipment, rolling stock, motive power, terminal facilities and service amenities or conditions that progress of modern Science and Inventions brought about. Railway carriage had consequently and necessarily to be relatively costly, only redeemed from unbearability by the economy of large scale operations. But that very factor made this form of transportation suited only to a system of large scale, mechanised production of the goods to be exchanged or passengers to be carried. Railway rates and fares could remain within manageable proportions so to say, simply because the service had necessarily to be operated on a large scale commensurate with the new age of mechanised industry and long distance widely ramified commerce. It was possible to obtain the highest gain for the owner of the service only by reducing rates, or keeping them to the level that the different kinds of traffic could bear. This consideration was absent while the Railway had a virtual monopoly of long-distance bulk carriage. But ever since the threat of intense competition from automobile traction, the owners and managers of Railways have had to revise their angle of approach to the problem. New principles of rate-making are being evolved, new ideals of the place of the service in national economy being formed, which invite more and more public authority to regulate railway transportation, eliminating the profit element.

The automobile, on the other hand, is more economical to provide and maintain. It finds the medium on which it operates viz. the road, provided ready-made, built at public expense, and available freely for its running. The latest improvements in road-making or surfacing, to make it more suitable for automobile tyres; widening it and providing other amenities for the greater utility of this medium, may no doubt lead to the increasing use of this invention . The loss of traffic to the Railway has not yet emerged in any alarming proportions, notwithstanding a rapidly expanding automobile transport. This is due to an increase in the traffic even greater than the carriage available in the new vehicle. Industry has expanded; trade has grown; people have more occasion or greater desire to travel. But even so the competition is telling. The roadbed is provided for the automobile practically free of cost. All that the owner of the Automobile Transport has to provide is the initial cost of the vehicle, plus its working expenses, and its care and maintenance. The size of the vehicle and its tractive capacity have been steadily increased. The automobile is economical, essentially speaking, for small producer and short hauls. The former is a great advantage for it in a country like India. It can take any load, large or small, from single consigners, and deliver it to the doorstep of the consumer which the Railroad cannot do. The initial capital cost is not prohibitive for the man of moderate means; and the operating expenses can easily be kept within the limits of the service rendered. The fleets of vehicles owned by large scale carriers by road characteristic of a country like the United States are, in the aggregate, costly but not comparatively in contrast with the railways. The suitability of the automobile for the smaller producer characteristic of older countries, less industrialised and less developed in other ways is beginning to be perceived. The threat to the Railway of unceasing and irresistible competition from this source is beginning to be realised and appreciated by the Railway as well as the public every day. Where the basic policy of the State still leaves Transport service in private competing enterprise, the chance of wastage in the long-range to national development is not fully realised. But no one intent on a comprehensive, scientific national Plan can afford to overlook this growing menace to the smooth functioning of the country's aggregate economy.

IV. Early Forms of Road Transport Still Operating.

Road Transport in India has been known from the very earliest times. The great Empires of historic times, of the Maurya and the Gupta, had constant communication with their outlying Dominions and neighbouring states. Building of roads was considered, for administrative necessity as well as for public convenience, amongst the primary duties of Government, which the more popular, ambitious and successful ruler never failed to discharge. That tradition was continued during the later ages also, when indigenous rule yielded place to the alien. Some of the more enduring creations of the Pathan and the Mughal days, like the Grand Trunk Road, remain to this day as monuments to the public spirit of those Rulers, and bear evidence to the prevalence of considerable commerce and industry in those days.

The internal trade of the country was served very largely by these roads, supplemented by rivers and the coastal seas. Large caravans of merchant traders and famous craftsmen of all kinds frequently journeyed from place to place, and used all known means of Transport on these roads. Human porters and pack animals, like donkeys, horses, mules, bullocks, yaks, camels or elephants, carts and carriages of all description, carried both goods and passengers in large volumes over long distances in varying degrees of economy, efficiency, comfort and even luxury. According to the evidence of Chinese, Arabian or European travellers from time immemorial, the roads had shading trees at short distances and numerous Rest-Houses at easy intervals. Abundant arrangements were also made for food and water for man and beast, provision of necessaries, and protection for the safety of passengers and their goods.

The institution still remains of Pilgrimage as it characterised the population of all communities in all parts of the country. The shrines scattered in all regions and in every corner of the land necessitated the use of the road much more commonly than could be believed by those familiar only with the accounts of unsettled times when the Central authority had weakened and anarchy prevailed in the land.

There were in British India on 31st March 1939, some 284,000 miles of roads of all kinds as shown in the table attached :—

Roads in British India on 31-3-1939.

Total modern surface road	8,814	miles.
„ water-bound mecadam	54,892	„
„ surfaced „	63,706	„
„ Unsurfaced „	220,455	„
Of these		
P. W. D. Roads	39,394	„
Local Bodies	244,797	„
Grand Total	284,191	„

The economy of Road Transport by human or animal traction or carriage lies in the fact that the road goes everywhere and can serve every village, hamlet or farmer. It is necessarily constructed and maintained at public expense by the Central or Local Government. The old feudal European practice of exacting tolls from travellers does not seem to have been widely practised or popular in this country; and so the use of the road was free of cost to the transporter.

As a rule, again, the producer provides his own labour, pack animal or cart to carry his goods, his friends or family to market, to pilgrimage, or to pleasure trips, though the last was rather rare. Even where the animal, vehicle or porter was provided by a specialised carrier or transport agency, the initial capital cost as well as the working expenses and maintenance costs were not beyond the ability of the average small cultivator or craftsman, commonly trading on his own account. The common needs of daily life are even now served for great cities by this form of transport; while the village to village trade is almost entirely in these hands.

The human porter and sure-footed pack animals, like the mule and donkey, is even today found in large numbers in relatively sparcely populated parts of the country, not easily accessible or economic to mechanised transport, like mountains and deserts. The following table taken from a Government of India Publication on Agricultural Statistics

for 1937-38 published in 1942, gives the number of such animals now in use.

From the Agricultural Statistics of 1937-38 (published in 1942)

Number of Horses	16,30,708
Mules	65,470
Donkeys	14,67,593
Camels	5,26,674
Carts	5,583,577

The elephant is conspicuous by its absence in the list, though quite a large volume of traffic is carried by this agency to this day in the trackless forest regions of the South and the East. Once an ornament of Imperial Courts and an integral part of armed forces, the elephant still retains his less spectacular use. In bulk carriage, like that of timber, the elephant plays even today a role whose real significance is impossible to estimate. He may be costly to keep; but in proportion to the heavy haulage he does where neither cart nor car can go, and in proportion to the long years he can serve, the cost of owning and keeping this mighty monarch of the forest is not too high. There is besides the consideration of his by-products, like ivory from his tusks, skin and bones which more than repay the initial cost to the careful keeper. It would be a loss to the country, if this primitive but efficient agency for heavy transport without any unduly high initial investment, were allowed to be lost through uncontrolled hunting, or indiscriminate entertainment for distinguished visitors by such devices as **Khedda.**

The horse is used both for urban and rural travel and carriage of goods, as also the camel. There are over 16 lakhs of horses, mares and ponies, and over 5 lakhs of camels. Both these are draught animals. In the greater part of the country, still void of railway and inaccessible to automobile; they perform a most valuable and indispensable service. Assuming on an average each carries 50 tons in a year, they must be accounting for over 100 million tons of carriage for 4,000 miles per annum. If we reckon the cost of carriage for 1 ton-mile, at 6 annas—the average rate charged by Indian Railways was 5.98 pies per ton-mile, in 1938-40, the value of this animal carriage cannot be less

than 1,000 crores per annum. Even making liberal allowance for "working expenses" or cost of feeding, housing and maintenance, there must be quite a handsome surplus left, not less than Rs. 100 crores per annum; and that enjoyed almost entirely by the people themselves. For comparison it may be added that the Indian Railways carried in 1939-40 a total freight of 92 million tons and yielded a gross return on goods traffic of Rs. 72.56 crores, the average transport of a ton of goods being for 254.9 miles.

The carts, which, in the statistics given above, number over 55 lakhs, average being one to every 550 inhabitants of the country. Roughly speaking, they provide carriage for the largest number of passengers and freight for country produce of which no reliable estimate can be made. But there is no exaggeration in saying that they effectively compete with the railways even today, in bulk, as well as, perhaps, in value. For allowing 100 journies per year per cart, with one ton of freight per journey, over half a billion or 50 crores of tons of produce must be carried by this ancient and still surviving mode of transport.

In terms of ton-miles it may be difficult to calculate this service, though an average journey of 10 miles per day for each cart for 200 days in the year is not excessive. It allows for the cart and bullock being out of service during the monsoon or sowing and harvesting season for transport, though even then it does not lie idle and unremunerative like an empty Railway wagon lying in a station yard . The bullocks—the main haulage power of the cart—help in the agricultural operations during the rains. The above reckoning means 2,000 ton-miles per cart per year, counting only at 10 ton-miles per rupee. This values the cart freight at Rs. 500 crores gross.

In the aggregate, therefore, the volume of goods and passengers carried by these means must be fairly comparable and the service rendered to the country's economy greater in comparison to that carried by the rail-road. There is after all only some 40,000 miles of track (less than 30,000 miles after Partition in 1947), which may be said to serve a very limited area adjoining the railway lines. Even for feeding the railway itself, the cart and pack animal is indispensable. For the vast regions still left lacking in railway or void of motorable highway, the cart is the only instrument for economic carriage of goods and

passengers, whose significance must not be underestimated in any national Plan.

Another aspect of this service must likewise be stressed at this point for the benefit of those who would plan the country's transport service **en plein rapport,** to the overall economy. The cart and its haulage power, the oxen, as well as all other forms of animal carriage, are home grown products. No costly imports are needed on that account to swell the profits of the foreign manufacturer. No heavy loads of interest payable abroad to affect adversely our balance of trade or our ratio in exchange, as the Railways have done ever since their first construction.

The initial and maintenance cost of the cart is negligible,—relatively much smaller, and well within the means of the average tiller. All its parts are made at home, all repairs carried out by local craftsmen. The maintenance cost, moreover, is also, comparatively speaking, small. The haulage-power provided by homebred oxen in most parts of the country is possible to utilise in agricultural operations, when carriage of goods and passengers becomes an incidental service, a by-product, so to say, which is always available to supplement the farmer's income in off-season. Whatever the Service costs is thus almost entirely kept in the country—aye, even in the region that immediately uses it. It is a mere matter of redistributing a part of the nation's wealth. No fraction of it makes a drain to fatten the foreign capitalist and alien exploiter.

The horse, mule and donkey, camel or elephant are no less important, though the numbers of the last two are not quite so considerable as that of the horse. They are, however, almost entirely used in short distance haul and small consignments. They are most suited to regions where the railway would be unprofitable to construct, and even the automobile unsuited or uneconomical to use. For a long period to come, therefore, they would very likely survive as means of Transport suited to the local economy, and its peculiar conditions of production and distribution of wealth or diffusion of culture.

In Planned Economy, the movement of traffic will have to be carefully coordinated. Transport of goods of different bulk or utility and of passengers will have to be appropriately allocated by some central authority to the most suitable forms, with due regard to the volume and dis-

tance, weather and topography. A net-work of market-centres established at convenient points throughout the country would help to minimise the overlapping of transport facilities or their wasteful use by needless duplication of carriage or service. The use of the pack animals or the cart may be reduced in volume with the development of more rapid, more economic, more efficient means,—though these traditional and popular forms are unlikely ever to be wholly destroyed.

On the other hand, it is more than likely that the volume of traffic, as well as the desire and occasion for travel would grow,—much more rapidly than the newer forms can cope with,—thanks to the increasing production and growing prosperity of the country. Not all parts of the country would, economically speaking, be equally accessible or suitable for the more modern, mechanised, and initially costly means of transport. The industries, moreover, which will supply their parts and equipment will also take time to be established in the country. The tarred road and steel rail will also take time to grow. For all these reasons the contribution of these earlier and still efficient forms of transport should not be under-rated by whosoever prepares an overall national Plan.

The only problem, therefore, would be to fit in or co-ordinate the services of these with the general development of the country. The several forms may ply side by side; but they would have to be distributed or located in convenient and economic manner. The allocation of all the available traffic, in accordance with the value, distance, quantity of goods carried and other conditions including such special facility as cold storage waggons or air conditioned carriages, must be carefully considered by the National Planning Authority. Then alone will the best interests of the country, in the long run as well as immediately be served.

V. Mechanical Transport By Land

The Railways

Railroad traction was invented and made a commercial proposition in Britain between 1825 and 1830. The economy and suitability of this new mode of Transport to the rapidly industrialising British was too obvious not to be readily and immediately perceived. Rapid progress was accordingly made in its construction, organisation and

regulation, which however were based on private ownership and enterprise in this new means of mechanical and large scale transport.

Conditions in India were at that time radically different. But the Military necessity and political exigency as well as the economic possibilities, in the remote future if not immediately, led to experimental construction on three short lines about 1845 viz. the East Indian Railway from Calcutta to Raniganj (120 miles); the Great Indian Peninsular Railway from Bombay to Kalyan (32 miles); and the Madras Railway from Madras to Arkonam (39 miles). These trial constructions were deemed to be sufficiently successful to warrant an exhaustive review of the problem by Lord Dalhousie in 1853. After dwelling upon the social, political, military as well as economic advantages of connecting the chief centres by rail, the Governor-General suggested a comprehensive scheme of trunk lines linking the Presidencies with each other, and the inland regions with the principal ports. The outbreak of 1857 drove home the force of this Minute to the authorities in Britain, who thereupon decided to carry out the scheme. As private enterprise in India was unfamiliar with the new transport services, 8 Companies were formed in England. The interest on the capital invested was guaranteed by the Government of India, at a minimum of 5 per cent whether or not any profits were earned by the Railways. By the end of 1859 contracts had been entered into with eight companies for the construction of 5,000 miles of line, involving a guaranteed capital of £52 millions. These companies were guaranteed for a term of 25 years in the first instance five per cent return coupled with the free grant of land required for the permanent way, terminal buildings etc. In return the companies were required to share the surplus profits with Government after the guaranteed interest had been met. As the Rupee-Sterling ratio was not a fixed quantity, the interest charges were calculated at Re. 1—22d. Government were entitled to exercise close control over expenditure and working in the interest of the tax-payer. The early results were disappointing for a number of years. The Railways may have helped to improve efficiency of civil administration, mobility of armed forces and the country's trade; but they failed to make profits sufficient even to meet the guaranteed interest, which had accordingly to be made good out of taxation. Unnecessarily high standard of construction coupled with the engi-

neers' ignorance of local conditions, led to extravagance, waste and loss to revenue of Rs. 166½ lakhs in 1865. Government thereupon decided to build their own lines on the metre-gauge as a cheaper type. Though for strategic purposes, the main lines were kept on the broad-gauge. The necessary capital was found by borrowing. Direct Government enterprise being considered unsuitable, in the eighties further construction was made through new guaranteed companies, though on easier terms, e.g. 4 per cent instead of 5 per cent interest. The famine of 1879 and the falling rupee were the direct causes of this change in policy.

About the same time Indian States were invited to undertake construction in their own territories, and the Nizam's Government was the first to guarantee interest on 330 miles of line in the State and several others followed providing a very appreciable supplement to the Companies and State Railways in India.

In the first period up to 1870, 4,255 miles were opened, of which all save 45 were on the broad-gauge. In the next ten years were opened 4,239 making the total 8,494 miles of which 1,865 were on metre gauge and 67 on narrow gauge. New financial strain was felt by the fall in exchange, and the costly strategic lines on the frontier.

Rebate Terms Established

This brought about the fourth period—the system of rebates. Instead of a fixed interest guaranteed to be paid in gold, companies were offered a rebate on the gross earnings of the traffic interchanged with the main line, with a guaranteed dividend of 4 per cent, but the rebate was limited to 20 per cent of the gross earnings. A number of new lines were promoted on this basis. But these terms also proved unattractive and so were revised in 1896 to provide for an absolute guarantee of 3 per cent with a share of surplus profits, or full rebate on the main line's net earnings in supplement of their own net earnings. As these terms also did not attain their purpose, they were further revised. The rate of guarantee was increased from 3 to 3½ per cent and rebate from 3½ to 5 per cent with equal division of surplus profits over 5 per cent in both cases.

Conditions changed after World War I. The Acworth Committee did not approve of this system and advised

Government should aim at reducing by amalgamation the number of existing companies, and that private enterprise should be permitted only in cases where the State could not or would not provide adequate funds to construct new lines on its own agency.

As the device of Guaranteed Company with or without Rebate had proved uneconomical, the Government of India have abolished it, and now themselves find the capital required for the construction of extensions or branches to existing main line systems. Construction of branch or feeder lines, not likely to be remunerative from their own earnings, may, however, be guaranteed against loss by a Provincial or State Government or local authority, which desires to have such lines for administrative or purely local reasons; and four provinces have taken advantage of the offer.

Railway Profits begin.

The problem had meanwhile assumed a wholly new aspect due to other reasons. The gradual economic development of the country and the advent of new modern industries had vastly increased the traffic, both the passenger and goods. When the Guaranteed Companies' contracts expired, Government renewed them on more favourable terms. The fixed rupee-sterling ratio from 1899 had also eased the financial strain on the Central Exchequer on Railway account. The development of Irrigation in the Punjab and Sind had transformed the North-Western Railway system from a white elephant to a profitable venture. The costly strategic frontier lines continued to be unprofitable. But with the completion of the Chenab and Jhelum Canals, the North-Western became one of the great grain lines of the world choked with traffic at certain seasons of the year, and making a large profit for the State. In 1900 the railways for the first time showed a small gain to the State, though it was earned on a system of account-keeping anything but perfect. In the four years ended 1907-08 the net receipts—without depreciation or reserve —averaged close upon £2 millions a year. In the following year there was a relapse because of bad harvests in India, and the monetary crisis in America, and there was a deficit of £1,240,000 in 1908-09. But in the following year a profit reappeared, which continued to increase steadily in the war-years of 1918-19 when over 15 crores of net earnings were recorded. In 1921-22 there was a loss

again of over Rs 9 crores. These vicissitudes led in 1924-25 to separation of Railway Budget from the General Budget. Following the Acworth Report, the policy of nationalising Guaranteed Railways as each contract expired was adopted, and a large scale programme of Railway extension and new construction, as well as improved service and amenities was taken in hand.

At this stage, it is desirable to examine the economic aspect of Railways as a means of transport materially affecting the trade, industry, agriculture and social services in the country.

Comparative Economics of Railroad Transportation.

The Railways in India have been very costly to construct and costlier to maintain. Notwithstanding the gift of free land and the absence of any "preliminary expenses" the utter indifference of foreign owners who were guaranteed a net return entirely independent of the earnings or cost of construction and maintenance; and the equal incompetence of the supervising or controlling authority the building and working of the first Indian railways were a monument of extravagance, inefficiency and waste. The rates and fares, had, therefore, to be levied, and borne on the country's trade and productivity; but were framed without any regard to the capacity of the traffic to bear such burdens, or to the general level of the country's economic development. It was mainly an agricultural country, with small producer predominating. His produce of food grains or raw materials of industry was too small in unit loads to be really remunerative to the Railways at lower rates. Railways, by their very nature, can be economic only in a background of highly developed, modern, mechanised large-scale industry affording heavy consignments for through haulage over long distances. An agricultural country, backward in modern industry cannot but feel railroad transportation a burdensome luxury.

In the desire, however, to draw all available food stuffs and raw materials from this country to feed and employ the industrial population of Britain through rates on exports, from two or three principal ports were so designed as to make, comparatively, internal trade in these articles unremunerative, and through haul for exports preferred. The alignment of Railways themselves was so made as to help concentrate all trade, and such industry

as there was in the country, concentrate itself only in these principal outlets for foreign trade. The all-round and simultaneous development of the country was, therefore, sacrificed at the altar of Economic Imperialism, and slow sucking out of the life-blood of the country, which characterised British regime while it lasted in India. The "block rates" were not the only offenders in the working of the Railways as a public utility service. The heavy guarantee of a fixed net return on capital at charge, irrespective of earnings; and the incidental burden of a falling exchange, made an ever increasing charge on the country's revenues, which has not been counter-balanced even now in the aggregate. The "profits" even when they began to show themselves after 45 years of losses, were the result of a most rudimentary system of account-keeping. There was no provision for Depreciation; none for any reserve. Even so, they were neither steady nor continuous. The terms on which the expiring contracts, or leases later on, were renewed with the original companies were too onerous not to add heavily to the net burden. And when at last the several Main Lines System came to be acquired by the State, the compensation given to the companies who had worked these systems all those years, with conspicuous inefficiency and loss, added substantially to the capital at charge, and consequently to the burden of interest.

Being constructed out of borrowed capital raised outside India and the interest charge on which had to be paid in a foreign currency, the burden of Interest etc. began from the day the shares or stock of these companies was subscribed. The line took many years to be completed but all the while, the interest went on being paid out of the country's general revenues. This payment on account, so to say, was never recovered from the Railways even after they began to show some "net earnings".

In marked contrast with this, the Irrigation Works also constructed out of borrowed funds had to bear interest and Sinking Fund Charges, from the day the first sod was cut, before they could be classed as productive. When they were actually in working order, these works have paid a net return of 7 per cent on an average on the aggregate capital invested, while the net result of the Railways may still be found on the wrong side of the balance sheet, as the Table shows :—

(Figures in Thousands of Rupees)

Contribution General Revenues.	Transferred Railway Reserve Fund.@	Total Gain or Loss*.
Rs.	Rs.	Rs.
5,49,00	3,79,00	9,28,00
6,01,00	1,49,00	7,50,00
6,28,00	4,57,00	10,85,00
5,23,00	2,58,00	7,81,00
6,12,00	—2,08,00	4,04,00
5,74,00	—10,93,00	—5,10,00
——	—4,95,00	—9,20,00
——	——	—10,23,00
——	——	—7,96,00
——	——	—5,06,00
——	——	—4,00,00
——	——	1,21,00
2,76,00	——	2,76,00
1,37,00	——	1,37,00
4,33,00	——	4,33,00
12,16,00	6,30,00	18,46,00
20,17,00	——	28,08,00
20,13,00	8,86,00	45,07,00
37,64,00	13,20,00	50,84,00
32,00,00	17,88,47	49,88,47

preceded by a—indicate a withdrawal from ilway Reserve Fund.

preceded by a—indicate a loss.

he first year to show some signs of recovery pression. The earnings of the State-owned lines om Rs. 84 crores in 1932-33 to Rs. 86 crores and to Rs. 95.48 crores in 1936-37; but the net year's working showed a gain of Rs. 121 lakhs.

Indian Year-Book, 1947-p. 691.

The Irrigation works, moreover, increased **physically** the produce or brought about wealth in the country, while the railways were conspicuous by denuding the country of a good proportion of the produce it actually raised for feeding the workers, and providing the raw materials needed in British Industry. The total value of the **additional** crops raised by means of these Irrigation Works has been estimated at over Rs. 150 crores—more than 10 per cent of the aggregate agricultural production of the country without the aid of such works. No wonder, then, that in the early years as today there was considerable criticism of the Railway enterprise in India, in contrast with the Irrigation Projects. And yet the Government of India influenced by capitalist interests of Britain, continued to be indifferent to the latter for fifty years after their relative contribution to the national wealth had been demonstrated.

Costly to build and costly to run, the Railways were, from their start a monopoly worked for the profits of their private proprietor. The earlier forms of transport were naturally ousted from the field wherever the Railway showed itself. In recent times, the Road has had a resurrection, thanks to the invention of the automobile. But the automobile like the Railway, is a foreign product; it is more uneconomical than the railway because not only the vehicle and its parts but also the motive power—petrol—have to be imported. It is not a monopoly; and not too costly to commence operations. Its permanent way is provided for it at public expense, which also maintains and extends and improves it. It needs no expensive terminal facilities like the station buildings and marshalling yards, workshop and warehouses as a Railway does. It can assure a doorstep delivery which the railway cannot attempt. The unit load, and the average haul is also comparatively lower, and, therefore, more suitable to Indian conditions, in the case of the automobile which makes it, consequently, a formidable competitor to the railway. It is the more so, as while the Railroad had to submit to public control and regulation in an ever increasing degree, with imperative demands for safety appliances and regularity of service, the Automobile still remains, in the main, a free-for-all adventure. It would be, no mean task, therefore, of the National Planning Commission, if and when such an authority is established, to coordinate these rival forms of transport, and make yield a common service to

the maximum of their capacity to the country's industry and agriculture, commerce and social services.

Yet another criticism of the Railways centres round the absence of any industry which is the foundation stone, so to say, for the successful working of this new form of transport. Every nut and screw and bolt, every engine, boiler, waggon coach, and every item in the equipment of the service, had, for generations after the advent of the Railways in India, to be imported from Britain, which because of the standardisation of parts remained in effect, our sole source of supply. Every time that the country was shut off from this its one source of supply by a war or other such factor, its entire railways system was threatened with rapid deterioration and progressive depreciation. The lesson of this root deficiency does not seem to have been fully learnt even now; and so it is the theme of another Volume in this Series to emphasise the need for establishing and developing the basic industries required for the economic and efficient working of railways in India.

Thanks to the long period of Depression, when the Railways made recurring losses which they made good by loans from the Depreciation Fund, and by suspending their stipulated contribution to the General Revenues, by the end of 1939-40, the unliquidated liabilities of the Railways amounted to Rs. 66 crores, of which Rs. 32.29 crores represented the loans taken from the Depreciation Fund, built up since 1924-25, when Railway accounting was placed on a sound commercial footing; and the balance of 33.71 crores was made up of the unpaid contribution to General Revenues, which the Railways were bound to make, under the terms of the Legislature Resolution of 1923 separating Railway Finance from the General Budget. Under the terms of a Resolution passed by the Assembly in 1937, these dues were allowed to be held in suspense for three years until the Railways as was then hoped, turned the corner, and began once more to show a surplus. In 1939 the same resolution was repeated; but the heavy profits made in the war years enabled the debit to be wiped out.

The attached table shows the volume of Railway enterprise in the shape of mileage, capital at charge, gross earnings, the number of passenger and goods carried, surplus or loss to the State since 1924-25 as nearly up-to-date as possible.

(Crores).												
Rlys.	—	—	—	71.18	72.20	73.19	80.33	86.52	114.11	148.81	169.35	179.01
e Rlys.	51.65	55.59	50.87	66.38	67.22	68.13	75.12	80.57	107.08	141.10	160.53	—
ıg Ratio.												
Rlys.	—	—	—	66.44	64.75	57.92	55.51	51.53	57.25	63.89	69.52	80.63
e Rlys.	51.6	54.1	54.7	67.00	65.25	58.12	55.78	51.73	57.98	65.16	70.85	82.67
ɔassengers ing (millions)												
Rlys.	570.35	634.30	—	530.62	529.67	575.72	623.16	622.26	789.87	926.70	1,044.34	1,139.0
e Rlys.	—	—	—	477.97	477.13	519.65	563.70	556.89	706.11	829.41	937.20	—
s from carriage ngers (crores).												
Rlys.	—	38.58	30.54	30.73	30.47	34.14	39.69	48.80	67.17	76.53	86.74	89.54
e Rlys.	—	34.34	27.05	27.89	27.65	30.99	36.21	44.51	61.26	69.83	79.21	—
Tons originat- lion tons)												
Rlys.	77.8	87.90	—	88.36	92.18	92.78	97.00	95.26	96.68	102.13	100.63	91.5
e Rlys.	—	—	—	80.56	84.15	85.26	88.64	86.01	87.21	92.23	92.04	—
s from carriage ı (crores)												
Rlys.	—	66.09	—	68.57	72.56	81.48	89.63	97.21	103.23	114.68	116.32	104.34
e Rlys.	—	62.07	58.39	63.95	67.55	76.26	6.01	90.64	96.07	106.78	108.68	—
Charges (crores)												
Rlys.	—	—	—	—	—	—	—	—	—	—	—	—
e Rlys.	23.90	30.46	36.74	29.30	29.11	28.68	28.44	28.03	28.53	27.45	27.18	26.52
at Charge												
Rlys.	733	856	—	—	—	—	—	—	—	—	—	—
e Rlys.	608	735	752	755.00	758.61	760.92	754.72	772.51	780.73	787.00	796.85	807.75
Rlys.	38,270	41,724	43,021	41,134	—	—	—	—	—	—	—	—
ɔ Rlys.	—	—	—	—	—	—	—	—	—	—	(40,517.91 Total	40,524.23)
Loss Rlys.	—	—	—	—	—	—	—	—	—	—	—	—
ɔ Rlys.	13.10	4.04	—5.06	1.37	4.33	18.46	28.08	45.07	50.84	49.89	38.20	8.17

Total Mileage Open—All Indian Govt. Rlys. 48,469
All Railways 57,327

The gross receipts of railways in 1946-47 were 203.35 crores as against 225.74 crores in the previous year. Both passenger and goods traffic had suffered owing to a variety of reasons. The working expenses were 156.62 crores in 1946-47 as against 145.09 crores in 1945-46. The operating ratio, therefore, grew very substantially. The net revenue consequently showed a sharp decline from 60.38 crores in 1945-46 to 35.09 crores in 1946-47. Against this, the interest charges amounted to 26.52 in 1946-47 and 27.18 in 1945-46 which was due, however, not to any economy in working but to the reduction in the calculating rate of interest from 3.49 per cent to 3.30 per cent. The net surplus was only 8.57 crores against 38.20 crores in the previous year.

These varying fortunes of the Indian Railways are due, in the main, to their connection with the Government. The management, in the early years under the Companies, was wasteful and inefficient in the extreme. When their guarantees expired they were at first leased; but later it was decided, particularly after the Reports of the Acworth Committee and Inchcape Committee, to nationalise and take over for State management every company as the contract with it expired. It was hoped that, if the State managed this great asset economically and efficiently, as much in the interests of the system as a whole as a commercial enterprise of the State, as in the interests of the country's trade, agriculture and industry, as a public utility should be managed, all consideration bearing on the railways system as a whole, political or strategic, financial and commercial, as well as those relating to a public utility would be easily combined. The extension of the system, moreover, for which an ambitious programme of five years development was prepared and passed in 1924, would, it was felt, not be acceptable unless the Railways could be shown to be self-supporting as a Commercial proposition.

The preceding is not an argument against the ownership and management of such a great asset of public utility and enterprise. It is rather to point out the direction in which reform and re-adjustment are necessary. Thanks, however, to the predominantly commercial outlook which has governed the railways since 1924; and thanks also to the anxiety to safeguard effectively the interests of the foreign capitalists who had invested largely in these railways in the past, the then Government of India became unduly conservative in their desire to secure a monetary

surplus and their management of railways after they had been acquired by the State. Any changes like, for instance, electrification on a large scale was unwelcome, because it would involve very considerable replacement of existing equipment, and so lead to further indebtedness which the railways were not able to bear. Another change, like the advent of the automobile and the competition from the roadside that the railway began to suffer from after 1925, was equally unwelcome, not only because the road was free to private enterprise, but also because Government had evolved no means of coordinating, and distributed all available traffic according to the ability and suitability of each form to carry it. Now, however, that the railways are almost all State-owned and managed by Government and the road transport also is beginning to be largely nationalised through Provincial, States or Local Governments, it is a problem only of properly co-ordinating all available traffic and then readjusting and re-allocating it amongst the several zones or regions which they serve.

VIA. Resolution Regarding the Separation of Railway from General Finances, adopted by the Legislative Assembly on the 20th September, 1924 and Convention Resolution of 1943.

In order to relieve the general budget from the violent fluctuations caused by the inclusion in it of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the capital invested by the State in Railways :—

(1) The railway finances should be separated from the country's general finances. The general Budget should receive a definite annual contribution from railways; and that must be the first charge on the net Railway receipts.

(2) This contribution should be based on the capital at charge and working results of commercial lines. It must be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the last but one financial year plus one-fifth of any surplus profits remaining after payment of this fixed return, provided that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital, surplus profits in the next or subsequent years will not be deemed to have accrued until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines should be borne by general revenues. It should consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

(3) Any surplus after this payment to general revenues should be transferred to a railway reserve; provided that if the amount available for transfer to the Railway Reserve exceeds in any year three crores of rupees, only two-thirds of the excess over three crores are to be transferred to the Reserve, and the balance must go to general revenues.

(4) The purposes for which this Reserve can be used are defined as follows:—

(a) To secure payment of the annual contribution to general revenues;

(b) To provide, if necessary, for arrears of depreciation, and for writing down and writing off capital;

(c) and to strengthen the financial position of railways, so that the Railway service may be improved, and rates may be reduced.

(5) The railway administration is entitled, subject to such conditions as Government may prescribe to borrow temporarily from the capital, or from the reserves, to meet expenditure for which there is none, or insufficient provision, in the revenue budget. Such borrowings out of the revenue budgets must however be repaid in subsequent years at the earliest opportunity.

(6) A Standing Finance Committee for Railways was constituted consisting now of 12 members elected by the Legislative Assembly. The members of the Standing Finance Committee for Railways shall be ex-officio members of the Central Advisory Council. That body should consist of the members of the Standing Committee, plus one official and six non-official members elected by the Legislature.

The Transport-Ministry now places the estimate of railway expenditure before the Standing Finance Committee for Railways, about the time the demands for grants for railway come up for discussion. As far as possible

it should show the expenditure under a Depreciation Fund created as per the new rules for charge to capital and revenue.

(7) The railway budget is presented to the Assembly a fortnight before the general budget, and separate days are allotted for its discussion. The Transport Minister then makes a general statement on railway accounts and working.

The expenditure proposed in the Railway Budget, including expenditure from the Depreciation Fund and the Railway Reserve, is submitted to the Assembly in the form of demands, for grants. The Assembly also recommended :

(i) that the Railway Services should be rapidly Indianised, and that Indians should be appointed as Members of the Railway Board as early as possible, and

(ii) that the purchases of stores for the State Railways should be undertaken through the Indian Stores Department which is now part of the Ministry of Industries and Supply.

The principle of allocating the Railway surplus, as prescribed in this Resolution, has been modified by a later Resolution of the Assembly, passed in March, 1943. From April 1, 1943 that part of the convention which governed the contribution to the general Budget and allocation of the remainder was scrapped; and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines should be decided each year, with due regard to the needs of the General Budget and those of the Railways. During the War years there could be no question of the needs of the general revenues and so the entire surplus, after meeting the loss, if any, on the strategic lines, was made over to the general Budget. The Wartime Railways surplus income was, it need hardly be added, utterly artificial; as the greater portion of the Railway earnings was due to the needs of Government for heavy movements of goods and personnel.

Railway problems are growing in variety and complexity not only because of the dislocation caused by the War. The development of alternative forms of transport, and the reaction of their competition upon the Railways, will be noticed elsewhere. The technical problems of

utilising the Railways with the utmost economy, though considered from a somewhat narrow vision, may, however, be reviewed in this Introduction, to enable the reader more correctly to evaluate the place of Railways in our national economy, and their potentiality under an overall national plan. The problem of administrative reorganisation is also not negligible, especially under the new set-up in the country. They now aim at consolidating in one department all items of the entire Transport service on the Railways, including the supply of power; and correlate with it, wherever possible, other or alternative forms of Transport, e.g. by sea or air, road or river.

But the most important and comprehensive question was to secure the utmost economy in the working of the Railways. A Committee was appointed, under the chairmanship of an experienced British Railway man, Mr. Pope to investigate into and suggest a detailed analysis of every important item in the Railways. The job analyses given in the Administration Reports of 1939 or 1940 show the extent to which substantial savings are possible in this way. The most important recommendations of the Pope Committee were :

1. Intensive use of locomotives, of coaching stock, of machinery and plant.
2. Disposing of uneconomical wagons.
3. Combining resources between railways.
4. Handling and transport of small traffic and that to be transhipped at break of gauge.
5. Checking of ticketless travel, and securing of increasing earnings.

Indian Railway Enquiry Committee.

Another Committee was appointed in 1936, with Sir R. Wedgewood as Chairman to examine the position of Indian State-owned railways, and to suggest such measures as may without loss to the general budget,

(i) secure an improvement in net earnings, with due regard to establishing effective co-ordination between road and rail transport, and also safeguard public investment in railways, as well as provide adequate services by both means of transport; and

(ii) place railway finances on a sound and remunerative basis at an early date.

Their Report was considered by the Railway Board in 1937-38, and action taken to implement such of the recommendations as could be accepted without further examination. Further, special investigation was arranged where considered necessary.

Rates Advisory Committee.

To make the Railway rates as confortable to economic considerations as possible and in cases of dispute, to make appropriate recommendations a Railway Rates Advisory Committee has been constituted to deal with :—

Complaints of "undue preference" or that rates were unreasonable in themselves; or disputes in respect of terminal charges or of conditions as to packing of articles especially liable to damage in transit or cause damage to other merchandise; or if it were a condition of a given rate; or that railways do not fulfil their obligations to provide reasonable facilities.

VI B. Mechanised Road Transport.

The Railways occupy a very imposing place in the public eye as part of the modern Transport Service in a country. With the advent, however, of mechanised transport on the ordinary road by means of Automobile traction, the Railways are meeting with a formidable competitor, whose full significance is not realised even after twenty years of growing competition in this domain. Railway Administration Reports have no doubt contained paragraphs devoted to this aspect of our changing economy; but they have viewed the matter almost entirely as if it were a mere problem in Railway economics, and of avoiding or minimising competition, or co-ordinating the two services. The real, long-range importance of this new means of transportation, and its place in India's planned economy has not yet been appreciated.

For a country of the comparatively small producer, especially in regard to bulky traffic, like agricultural produce, road transport has an advantage which the Railways do not enjoy. The latter are, essentially, economical for large scale production, with great single consignments for through haulage over long distances. The Road service by Automobile truck, lorry or car, is more suitable for smaller consignments, within the means of the average farmer of

craftsman in the Indian village. Even there, it must be remembered, of course, that the primitive means of transport by human portage, or animal haulage, may prove more in harmony with the conditions of our village economy, as it stands today. If, and when, however, the village economy is reorganised, as suggested in another Volume in this Series, to permit of comparatively larger production by co-operative farming on a universal scale, by intensive cultivation and scientific farming with mechanical aids wherever suitable, the larger unit carrying capacity of the truck may prove more economical.

The main reasons for the greater economy of automobile road transport lies, indeed, in the fact that, comparatively speaking the automobile carrier needs less initial capital than the railway. Its permanent way, which the railway has to provide at its own heavy cost, is given free. The road is usually built and maintained at public expense. Road tolls are a relic of a dead and gone past, which no civilised economy cares to uphold; and so the maintenance cost of the permanent way does not fall upon the automobile transport, as the Railroad in its specialised carriage has to bear.

The upkeep charges or working of the automobile, in the shape of driver's wages, fuel and oil, wear and tear of the vehicle and its parts, bear a smaller ratio to the earnings of the service than the corresponding charges in connection with Railway transportation. Railroad maintenance is, moreover, a much more continuous item than the similar burden on the automobile, which can adjust a good portion of these costs according to, as and when traffic is available. The specialisation of the road vehicle to the type of traffic carried is common in both forms; but the Automobile has the advantage of home delivery and so avoiding terminal costs, which the Railroad cannot. Speed and distance covered are, of course, comparable in both; but the turn round is quicker with the automobile road-carrier than with the railway. The latter has thus to bear proportionately higher cost of unused stock for a longer time. The problem of empty return is also less considerable for the motor truck, van or passenger coach and consequently the initial economies are greater in the case of the latter.

The burden of taxation tells a somewhat different tale. The Railways, being State concerns in India, have to bear less taxation charge, in regard to customs duties or income

taxes. In regard to Municipal Rates, also, they have concessions which the automobile is not allowed. On import of the complete machine, or of its parts and accessories which have almost all to be brought from abroad, there are heavy duties, which add to the initial capital cost of organising and providing the service. The operator, moreover, being largely a private entrepreneur, has to bear all the burden of the income and other similar taxes, which do not affect the railways. The stores, parts and accessories of automobile traction like those of railways, are imported; and as such they have all the handicaps of our dependence on foreign sources, which is uneconomic even in normal times; and becomes much more so in times of war. Even the fuel or motive power is heavily taxed, with the result that working expenses are considerably increased.

Attempts have, therefore, been made in recent years to organise an Automobile Industry in the country, which, however, begins with assembling the parts made abroad; but which promise to set up the entire industry in all its parts and accessories within a limited period in this country. Whether the economic working of such an industry, in competition with far more advanced foreign production of such goods will be achieved remains to be seen. The consumer, however, will have to pay for the privilege of establishing the industry in the country in the shape of fiscal burdens effectively and adequately protective of the new industry. These might be avoided if the industry was, from the out-set, a public enterprise, owned, managed and controlled by the State, especially as it is such a vital adjunct of modern defence.

The motive power of automobile transport has to be obtained from abroad, since India is lacking in any source of petroleum production at home. In view of the military importance of this modern form of transport, this is a serious handicap, from which the Railways are comparatively free. Their motive power of coal or electricity is home grown, and so they are free from this particular danger, comparatively speaking. Substitutes for petrol are under investigation and development; but whether these can be developed to the extent this country would require for purposes of her national defence by land, sea or air, from her own resources, remains to be seen.

There is, certainly, room for research in developing of electrically propelled automobile, and the invention of

sufficiently large storage batteries holding driving power to meet the requirements of comparatively long and heavy hauls on the road. Power alcohol from bagasse and yet unknown or unexplored possibilities of wild forest produce offer less expensive alternatives, whose potentialities need to be thoroughly investigated before judgment can be pronounced on the suitability, with these alterations and modifications, of the mechanised vehicle, the automobile for the road transport service fitting in the planned economy of India.

The present attempts at starting the Automobile Industry by private enterprise do not seem free from danger, from the point of view of adjusting with and accelerating the National Plan. As already observed, the initial attempts are more at assembling parts imported from abroad, than wholesale or complete production of all requirements and accessories at home. It may be conceded that even in the best developed American enterprise in this field, not every part and each accessory is made on the premises primarily devoted to the production of motor vehicles. But taking the country collectively, they produce all their own requirements for this industry; and so the danger of foreign dependance for a vital item of national economy and military defence is avoided. In India, however, the industry as a whole is new; and the production of complete cars, as well as of any parts, is a new venture. The principal rivals of Indian producers are so highly advanced, that they produce by the millions whereas their Indian counterparts, if not subsidiaries, will not produce by the thousands. Labour may be cheaper here; but stores and parts are dearer. All the possible internal economies, necessary for large scale production economically, seem unlikely.

The industry, moreover, has started under private enterprise. It is, therefore, necessarily, on a competitive basis. Such internal competition, in a protected infant industry is claimed to be the one justification of eventual success on a sound footing. But while such protection lasts, it is apt to generate unfair practices in trade rivalries, which are usually ended by establishing virtual monopoly through Trust or Syndication. From the point of view of planned development, if such an essential enterprise remains in private, profit-seeking hands, it would be all but impossible to devise or employ all those methods and machinery of co-ordination, integration and allocation

of traffic to appropriate carriers, which are indispensable if the Plan is to succeed.

On the 31st of March 1940, there were in British India motor cars and goods vehicles as shown in the table below :

Motor cars and taxies	..	94,892
Motor cycles	..	8,387
Motor heavy vehicles	..	37,780
Total	..	140,461

During the War there was a considerable increase, mainly on Government account and for defence purposes in the number of such vehicles operating in the country. With the advent of the United States into the War, and with India becoming a base of operations for the Allies' Asian Campaign against Japan, the numbers grew still faster. At the close of the War a large number was left over for disposal. Statistics are not available to say precisely what number is plying today. But for some 60,000 miles of all weather roads in India, a total of 250,000 to 500,000 vehicles in public and private hands is not too much for the needs of the country. With the extension of the road system as planned, and the expansion of the country's economy as proposed in this Series, India can easily absorb a hundred thousand units a year as against 15,000 units of average imports in the pre-war years. Automobile transport will thus be much more in demand than calculations based on past experience can justify; and once the vehicle is available, the Service expansion will only be a question of time and of organisation.

VII. Water Transport.

Water transport is, and has always been an important adjunct of India's national economy from time immemorial. Bulk carriage is unquestionably easier by water than by road. Wherever, therefore, produce was abundant and trade between distant parts flourished on a large scale, and considerable distances had to be covered for heavy load, water transport was naturally more economical, and, therefore, preferred. In India, with her principal rivers flowing through hundreds of miles all the year round, with imperceptible gradients in fertile regions and flourishing industry, inland water-transport had developed and was utilised from days before recorded history began.

The economics of water-transport, both inland and across oceans, are too obvious to need detailed enumeration or specific analysis. Road transport, it has already been remarked, is relatively cheaper than Railways because the permanent way is much less costly than the corresponding item in rail transport.

Whatever the cost, the carrier has not to bear it, since the road is provided and maintained at public expense. Reasons of national economy as well as strategy for defence has made this system universal and unexceptioned. In the case of water-transport, inland or overseas, the permanent way is free of all cost to anybody. It is a gift of nature, which needs very little outlay, comparatively speaking, to be made serviceable for this vital ingredient in national development.

Ports and Harbours are also, primarily, gifts of nature. And if and where material capital or human labour is invested in their development and making them more serviceable under changing conditions, that outlay is comparatively very much smaller than the corresponding terminal facilities provided by railways. These arrangements, moreover, are made by the State or some public authority under it; so that the initial capital cost does not fall on the carrier entering or leaving a port. Port dues are, indeed not extinct like road tolls; but internal competition among ports in the same country, the incidence of this burden, are relatively slight.

Natural advantages for inland water transport in India are even greater than might appear at first sight. Our rivers are, wherever they exist, perennial, not periodically frozen, like the Volga or the Vistula, the Danube or the Don. They require no costly ice-breaking, mud-dredging, fog-clearing equipment to make them at all serviceable in certain months of the year. They flow through plains, needing very little of lifting equipment for traffic, like locks, needed on rivers meandering through uneven country. Locks would add, no doubt, to their accessibility and use in certain areas.

Addition of arterial canals would improve the linear extent of the service. But, hitherto,—and particularly under the British regime,—canals have been dug almost entirely for land irrigation, wherein navigation found no place. Such of the great canals on the principal rivers of

India, which are wide and deep and perennial enough to offer navigational facilities, have been constructed, not primarily for that purpose. Their lay-out, dimensions and use are consequently governed by considerations other than commercial. The Indus was navigable for a thousand miles from its mouth, before the Sukkur barrage barred through carriage at Sukkur. It adds materially to the cost of transhipment on Indus in that Province, as compared to the parallel service of the railway. The Ganges admits boats of a thousand tons up to Allahabad, and Calcutta is only a river port, a hundred miles from the mouth of the Hoogly. But the landing and loading facilities at several convenient points along the Ganges leave much room for improvement if the tranpsort service along this grand highway of commerce is to be properly developed. But even if all these facilities were developed to their maximum, the capital cost for making this line of communication and transport as efficient as it well might be will be comparatively very small.

The cost of the vehicle, likewise, for water-transport is, in proportion to the cargo or passengers carried per unit, comparatively small. Ships for deep rivers or ocean transport are now built in very large unit sizes, and seem to be very costly. But in proportion to the quantity or numbers carried, the cost is small. Initial capital out-lay, therefore, for this form of Transport Service is, compared to others, small. Its only disadvantage is that it is fixed by nature along given lines, and can be used only where the natural gift is in existence. Human ingenuity and effort can no doubt make canals, and join rivers as well as oceans, e. g. by the Suez or the Panama Canals; but the scope for these is also limited by the geography and available quantity of water in a river. If the National Planning Authority desires to utilise this natural gift of the country to the fullest, it must devise all such expedients as would widen the use of this cheap means of bulk transport, being assured that, with all these outlays, the capital cost mile for mile and maund for maund of carriage will be much smaller than on any alteranative form of transport.

Whatever these potentialities, the inland water-transport had no fair trial, once the railway came in, and competed ruthlessly with the natural facility of the river transport. The Railway is said, even in Britain, to have killed the canal. In other European and American countries,

however, even today, the essential economy and advantages of inland water-transport, carefully developed, and scientifically interlinked by a network of canals are by no means neglected. The Atlantic has been connected by canals in France with the Mediterranean, the Mediterranean with the Red Sea by the Suez Canal, and the North Sea is linked with the Black Sea by similar developments on the Rhine and the Danube, and the yet more ambitious achievements or projects of Soviet planners.

The great arterial rivers of northern and eastern India offer easy and immense possibilities of development in this direction. The Ganga with all her tributaries, like the Jumna, Gomti, Gandak, Gogra, Son etc. will easily provide a most economic grid system of water-transport for the greater part of northern India. It can be supplemented by a similar network on the Meghna and the Brahmaputra and lesser rivers of Bengal and Bihar, Orissa and Assam. Similarly, the Mahanadi and the Godavari, the Krishna and the Cauvery, not to speak of the Narmada, the Tapti and the Sabarmati on the West, have been neglected, their waterways silted up and blocked, their ports made unusable, the mud and silt are only cleared by the annual floods that do double damage in clearing away millions of tons of very valuable soil. The possibility of their being linked up with such rivers as the Sutlej or the Chambal is a problem in engineering which has been solved in other countries less happily situated than ours; and there is no reason why we cannot solve it here.

But the narrowly conceived operation of the Railway Transport Authorities until today because of the capital commitment of Government in that service, has killed these possibilities, which can only be revived if the National Planning Authority realises the true role and ultimate possibilities of this great endowment by nature of our country. Besides the free roadway provided by nature, the initial cost per unit of carrier on Inland water is much smaller in initial equipment than on any other form of transportation. The wooden hulks of olden time could be easily built, and were built, out of the native forest, incidentally providing employment for a wide range of skilled artisans and unskilled labour. The provision of these ships with all the equipment of sails and cordage, anchors and cables, oars and masts, also came from indigenous sources, which thus advantaged the local economy in proportion. There was no need to pay a tribute to the foreign ship-

builders or boiler-makers, as we have to do today, because the industrial back-ground is not so highly developed as is necessary for an economic ship-building enterprise of the modern kind within the country itself.

In the days of the sailing vessel, at least, there was no cost on motive power, whether coal or oil; for the winds of nature or the tides of the sea or the current of the river carried the cargo, and passenger-laden vessel. It made water carriage in heavy loads cheap and so water served as the principal means of transport wherever these facilities of nature were available.

This is, however, no longer the normal condition in shipping. Steam-power has taken the place of wind-driven sailing vessel. And though the maintenance costs of a modern steamship is greater than that of the windjammer, the increasing substitution of oil for coal leaves a much larger space for payload, as they call it in America, and makes for considerable saving in labour cost, too, which bring their own advantages. Wages bill, ashore and afloat, has risen; but even so, given the much greater unit cargo that can be carried by water, the cost of maintenance and working may be deemed proportionately much less by water than by land in every form of transport.

The losses in shipping and risks of water carriage common in the early days of long distance international shipping, are no longer worth reckoning on the debit side of the account. If such risks still continue, there are effective means of guarding against or insuring, which have also been devised. Erection and maintenance of light-houses and life-boats; buoying of channels, and provision of docking facilities are all liabilities of the State which a modern country has to maintain for its own reasons. Sea transport today is much safer, from the point of view of accidents, and speed is no less nor regularity of service lacking compared to even mechanised road transport. The terminal costs of ports and storage tend to increase. But even these do not make water transport costlier per unit in any case. It costs less to carry a ton of coal from Bristol to Bombay, one of the costliest ports in the East, over 7,000 miles, than it does to carry the same commodity by rail from the coal fields of Raniganj to the mills of Ahmedabad.

Both inland and overseas water transport has thus possibilities which the National Planning Authority will

have carefully to investigate, and co-ordinate with other available forms of transport, to make a really complete, composite, adequate and effective as well as economic service. Under modern conditions, and with the latest developments in ship-building, both naval and commercial. India may appear to suffer from certain handicaps. But these are not difficult to remove. In the olden days, the primary material of ships and their equipment for service was all available within the country. The iron and steel of which modern ships are made, the engine and boiler, the power which drives, the mechanical and electric equipment which runs these vessels, have all to be imported from abroad. Ship-building, once a far-famed and flourishing industry of this country, has to be replanted in the land by artificial methods if need be. We have equal possibilities of developing an iron and steel industry, already founded on a modern scale, which may easily provide all these basic materials. And the production of engines and parts, equipment, apparatus, or instruments is likewise an item in all round planning, which cannot be ignored when the organised, purposeful co-ordinated expansion of the country comes to be achieved.

The extent of ships and shipping business, needed by India for her inland waterways, for her coastal service, and for her overseas trade is impossible to state with any degree of accuracy. Though, as already remarked the advent of the Railway and its ruthless competition has strangled the inland water carriage of goods or passengers, there is still enough evidence, under present conditions, of that ancient means of transport and communication having still its vitality. It needs but a small dose of public support and encouragement; it requires but a modest co-ordination of all available traffic, of an expanding economy, to resuscitate and reinforce this cheap, efficient, widely prevalent service. The little attention that is necessary for erecting or maintaining adequate dockside and wharfage facilities with modern mechanised equipment for loading and unloading, stowing and discharging cargo, would improve the innumerable Inland Ports of India, which once did a large volume of through trade to overseas countries, and which still have potentialities of an amazing resurrection.

The coastline of India stretches, even after Partition, to over 3,000 miles. The ports and harbours, which once marked this long coast line have been stifled or rendered

useless, mainly by the competition of "block rates" on the Railways; but partly also by the exigencies of a foreign power ruling in the land for its own aggrandisement. In the Vijayanagar Empire of five hundred years ago, when it covered the whole of South India, there are reported to have been 84 principal ports, which today are hardly even names. Their sites are marked by silt and mud, their memory maintained by a few straggling fishing crafts lurking in their coves; their potential cities unknown except to the antiquary or the enthusiast for local development against excessive centralisation, or concentration of the country's economic energy, resources and outlet in a very few principal ports. Against the hundreds of ports or roadsteads which flourished a hundred years ago on the coasts of India, there are now 6 ports only which do 90 per cent of the country's shipping business. This is not healthy for the country's economy in the aggregate. It should be impossible in an era of planned development. Nevertheless, as the following statistics would show, the shipping that enters and clears, in cargo or ballast, both steam and sailing vessels, easily passed the ten million ton mark, in the principal British India ports alone; while the adjoining maritime States which had all through our long and storied past, highly developed an extensive sea-borne trade, must account for a similar proportion.

Total Number of Vessels that entered and cleared at Ports in British India. (Compiled from Statistical Abstract 1930-31 to 1939-40. The figures for tons are in thousands.)

Entered.				Cleared.		
	1930-31	1935-36	1939-40	1930-31	1935-36	1939-40
With Cargo.						
Steam No.	2,538	2,456	2,811	2,523	2,477	2,813
Tons.	7,858	8,264	9,184	7,823	8,170	8,972
Sailing No.	492	457	684	920	891	1,352
Tons.	42	38	47	87	77	86
In Ballast.						
Steam. No.	338	286	427	255	220	380
Tons.	1,072	943	1,268	871	790	1,327
Sailing No.	338	369	671	53	43	86
Tons	33	33	40	4	3	10

Total Shipping of Principal Ports in India 1939-40

Port.	No.	Tonnage (thousands)
Bombay	83,555	12,724
Calcutta	3,966	9,061
Karachi	10,727	5,155
Madras	1,416	5,104
Tuticorin	3,141	2,514
Cochin	2,302	2,539
Chittagong	887	1,064
	105,996	38,161

Of these the Sailing Vessels :—

	No.	Tonnage (thousands)
Bombay	78,996	1,371
Calcutta	10	2
Karachi	9,038	492
Madras	24	2
Tuticorin	1,265	84
Cochin	1,060	60
Chittagong	390	8
	90,783	2,019

With so much shipping business available, even in the relatively backward or undeveloped condition of our National Economy, it is permissible to believe, that properly encouraged and effectively developed, with allocation of all suitable traffic for carriage, both on inland waters and overseas as well as coastal trade, the shipping and shipbuilding position of the country has immense scope for development. Note will be taken in the Summary of Developments at the end of this Volume of the latest schemes or projects to stimulate the modern shipbuilding industry in the country, both for purposes of coastal trade and for overseas commerce not to mention the naval needs. The history of what little Indian shipping enterprise of a

modern character we now have, shows the implacable hostility of foreign vested interests in the Indian seas and along India's coasts, which, from the very birth of the indigenous enterprise, sought to throttle and strangle it. Unfair devices like secret or deferred rebates, rate cutting, and other illegitimate attraction to the shippers made competition by the struggling local ship-owners more than ever unbearable. The unconcealed patronage of the foreign ruler to its own nationals in the matter of mails, stores, and troops or personnel carriage, an imperceptible, but not the less effective advantage to the alien in our midst against the local competitor, who suffered losses for years that would have daunted and driven out less determined enterprise. Attempts at reserving coastal traffic for indigenous shipping enterprise were denounced as "piracy", even though the best models and most approved precedents of Europe and America had continued those devices, even after unquestioned mastery in the line had been secured and maintained for over a century. The "Navigation Laws" of Britain were acclaimed as models of their kind by even such ardent advocates of freedom of trade and enterprise as the father of British Economic Science. America needed no special effort, after the colonial system was ended, to develop her own shipping; and though for a while in the XIX Century, she fell behind in overseas; she has now regained her leading position as much because of the local enterprise as because of the havoc of the last War on the shipping business of her principal rivals. There is, in view of such a history, no reason for India to hesitate in developing by every means she can her own intrinsic strength and potentiality.

The connection of an adequate, modern ship-building industry with the necessary and effective provision for National Defence by sea, is too obvious to need special emphasis. The existing Indian Navy is too small to provide sufficient scope for a full sized modern ship-building industry in India. That industry has, no doubt, made a beginning in India in the last few years; but its capacity is much too limited to provide all the requirements, including equipment, armament and accessories, of a fair-sized Navy in all the variety of cruisers and carriers, battleships and sub-marines, destroyers and mine-sweepers, gunboats, sloops and coast guards. Besides, the growth and firm establishment of a proper ship-building industry, presupposes, as in the case of all modern industries relating

to transport and communications, the equal, if not greater, development of other industries which may be termed basic industries for that purpose. Modern industry, in all its bewildering variety and complexity is closely interdependent; so that the growth of any industry to its optimum level would be impossible unless and until all connected preconditioning industries are also developed to the same level about the same time.

If this aim is not realised,—and a comprehensive, overall, National Plan would be unthinkable which leaves out of sight this consideration,—the entire ship-building industry, on the commercial as well as the naval side,—would be incomplete at home, and dependent for its vital parts for imports from abroad. This is no new phenomenon in Indian industry. It has happened in regard to the railways all this hundred years; it happens in regard to the ship-building industry; and it will happen also in connection with the aircraft industry. Such a dependence is wasteful or uneconomic in normal peace-time. It becomes dangerous in war-time. No argument can be stronger in support of the aim of National Planning on a basis of National Self-Sufficiency, than that in connection with Defence.

This is not to say that India shall have no modern-type ships, shipping, or ship-building industry. Nor need we wait till all three on the commercial as well as the naval side are adequately developed, before thinking of a beginning in one or the other or in all three. But India should and must make a beginning in her shipping and ship-building industry, even if necessary by importing essential parts, equipment, armament or other accessories from abroad, beginnings should also be made at the same time for a much more broad-based and deep-rooted enterprise including both naval and civil ship-building in all its variety of tramps and liners, coal burners or oil burners, if not also sailing vessels as well as motor vessels. And all connected, auxiliary, accessory industries must also be likewise developed. That is the purpose of planned, purposeful growth as against chaotic or accidental, unplanned, unco-ordinated development.

In so far, moreover, as shipping is a form of transport service, and, therefore, a public utility; and in so far as ship-building in all its parts, variety or equipment and munitions, is a primary industry for this aspect of nation-

building and national defence or security; both will have to be initiated and operated as public enterprise. The maximum of service at the minimum of cost or sacrifice can only then be attained. There are very slight vested interests of private proprietors in this field; and such as there are can be easily taken over, with or without compensation, so that the entire industry and service can be owned and worked as public enterprise, primarily for service to the community as the Post Office; and incidentally for such surplus or profit as can be gained from a complete monopoly of an essential service. This branch of our economic development, under the present regime of private profit-seeking enterprise, cannot flourish without effective State protection and abundant State Aid. The vested interests themselves demand such protection and assistance as condition precedent to further expansion. Instead of making the country as a whole or the consumer of that service bear the burden of this State Aid and protection to a national industry of vital importance to the country's security as well as prosperity, it would be much better if, from the start, the industry as well as the service are nationalised in ownership and management, in staff and equipment.

There is, besides, a personnel aspect of this matter which the National Planner must not overlook. For an adequate and efficient shipping service and ship-building industry, we must have sufficient personnel suitably trained and equipped. There is, no doubt, a large section of our population who are daring sea-farers from their cradle to their grave. But they are still untrained in modern methods, modern instruments, modern technique in trade or war. Out of our available sea-farers excellent seamen could be made by training and experience to man both our mercantile marine, however large it may grow, and our navy. The National Plan, conceived and presented in this Series, has never overlooked the personnel aspect in any field of planned development. In this case it is no less important; and the planner of the future cannot overlook it, even to start with, however much he is obliged in other respects to proceed according to some prescribed schedule of relative priority.

VIII. Aviation.

The last important form of Transport Service, which is also the latest in the field concerns Aviation. Flying has

been made safe after World War I; and commercial aviation, with regular services between stated points. As noted in another Volume in this Series dealing with Communications, the service began in this country about the early thirties; and has made considerable strides in the years following. Particular impetus was given by World War II, which saw aircraft being produced by the hundred thousand per annum, and utilised after the War in commercial air transport between countries and continents, within the country, and even within component parts of a Federation. A brief notice will be taken in the Summary of Developments of the progress made by this industry or service, during the war as well as in post-war years.

This, like all other modern, mechanised forms of Transportation, is a new service in India; and its basic industry to provide the planes, their parts and accessories, together with all the equipment, apparatus or instruments, needed on the ground, in aerodromes, or in the air for navigation communication, safe landing or take-off, is almost non-extent in this country. For all essential requirements we are dependent upon foreign supply; and once we take one type of machine or equipment from one place, we shall permanently be dependent upon that source of supply only. It is the peculiarity of modern industry that its parts are so highly standardised and exact that they are made in millions correct to the thousandth of an inch; their equipment and accessories so specialised that makeshift with others is impossible. The parts of one machine interchange freely with those of another of the same make; but they will not serve for the similar needs in another make. The result is that without an adequate aircraft making industry of our own in the country itself, any development of commercial or military aviation will make our dependence on foreign trade and sources of supply proportionately greater.

This does not, of course, mean that we need have no aviation in this country, civil or military. Air transport has come to stay; and this country has already developed the service sufficiently not to go back on the progress that has already been achieved. For air-transport has certain obvious economics which cannot but make it an effective rival of other forms actually in operation. It needs no very great capital outlay in building permanent way, like a railroad, or even an automobile highway. It has, therefore, to acquire no costly land for its operation and compensate

heavily the private owner of such land. Even water-transport, particularly on rivers, will have to incur capital outlay for docks, locks or banks for ice-breakers, beacons, buoys, etc. which the air-way will not need.

Not much is needed, comparatively speaking, even, by way of terminal facilities of stations, sheds, godowns etc. or docks, cranes and other equipment at ports and harbours. Its capital cost in initial equipment and providing air craft is, no doubt, considerable; and so also in regard to aerodromes, weather-stations, control towers and their equipment and all attached offices. Comparatively speaking, however, that is not a disproportionately heavy burden; and such as it is, it is nowadays borne by the State in all advanced or industrialised countries. To the carrier, therefore, if he is a private **entrepreneur,** this item of capital cost is not a heavy, initial burden to be made good out of revenues—out of the charges levied on the traffic.

The maintenance cost, however, is very heavy per unit operated, or per unit of traffic received. The upkeep of air craft, its overhaul from time to time, and servicing in general, as required by international conventions and safety regulations, is a costly item. The fuel it consumes, its motive power, being imported almost entirely from a long distance, is also costly, and involving considerable consumption at a time, it necessarily means a disproportionately heavy bill. Its stores, parts and accessories are, similarly, expensive; as also the proportionately very high charges by way of aerodrome or port charges, rent etc.

Another item, which makes the economics of air-transport, more peculiar and complicated than its principal competitors', is the wages and salaries bill of captains and crew of passenger as well as freight carriers; of the ground staff of engineers, attendants, or unskilled labour; of office staff and agents. This is proportionately very high, mainly because the service is relatively new, and its operation efficiently requires highly trained personnel. It is worth noting, however, that notwithstanding the comparatively recent advent and development of air transportation; and notwithstanding the relatively high technical skill needed, India is not deficient in airmen and ground or office staff who can hold their own against their confreres anywhere in the world. This is, of course, due to the rapid training and varied experience that the War required airmen recruited in India to possess. That is a welcome and an

encouraging feature. But it does not make the comparative economics of air transportation the less complicated or the less at a disadvantage. That explains, in part at least, why aviation on a commercial scale is everywhere a losing business.

The one advantage, however, that Aviation has over all other forms of transport, is comparatively high speed at which it operates, and the consequent ability to turn round in a very much shorter space of time. This makes for a much larger turnover, and consequent **pro rata** reduction in overhead as well as unit costs. The air craft, again, not being tied to any single, fixed route, can go any way across mountains and oceans, deserts and forests without bothering about the condition of the road. Its service may be impeded by storms or other disturbances. But these are no real hindrances and cause no very great loss.

Aviation in private profit-seeking hands, has a way of paying for itself by charging the public what it costs to carry them or their wares. But the State nowadays fixes everywhere the fares or freight by air, or at least indicates the standards or norms according to which these charges are to be fixed. And even if the State did not do so, so long as there is competition among carriers there is an invisible ceiling or unstated maximum beyond which no aviation enterprise can go. There must be a definite proportion between railway and bus service rates and fares and those charged by Air Services for freight or passenger.

Air-transport is still largely a luxury service, mainly for the highest class of passenger traffic, which is at any time limited to a small proportion of the total available traffic. Carriage of goods by air is still to develop, even for those commodities which find the best market by rapid transit. The dangers of air travel are apt to be exaggerated. Statistics show the risks of loss or damage to life or limb, to goods of any kind from air or ground accidents comparatively no greater than by land or water transport. Notwithstanding these redeeming features of speed and safety, of rapid turnover and economic utilisation of all stock, equipment and staff, air transport must still be pronounced to be in its infancy. There is a great field for its expansion, for the fullest advantage being taken of its obvious economies. But that can only be achieved on a full comprehensive National Plan, administered by a suitable Administrative Authority, which can collect, collate or

coordinate all available traffic and allocate its several constituents to appropriate and the most economical means of Transport.

It is unnecessary to emphasise the intimate, the vital connection of Air Transport with National Defence. As already remarked, modern aviation owes almost all its growth of the two World Wars waged within a generation of each other. No country of the size and population and trade of India can afford to ignore this factor. No country under present world politics, can afford not only to be lacking in aircraft and all the equipment necessary for its operation; but also in the basic industries for an efficient up-to-date air service. And as these have a vital importance with the national economy in all its facets, the reasoning advanced in the section of this Introduction dealing with Railway and Automobile Transport supporting nationalisation of this Service and Industry applies, if anything, with all the greater intensity. There are as yet very few vested interests of private owners of this service or industry. And the State has reserved to it sufficient margin of powers to make this a completely nationalised enterprise, owned, controlled and managed by the State or its statutory agents.

IX. Miscellaneous—Pipe Lines.

The only other modern form of Transport Service for particular kinds of transport is Pipe lines which in the United States and other countries carry such commodities as crude oil from oil wells to refineries. Sewage disposal and water supply in almost all modern towns is carried on by such pipe lines, though few recognise in them a form of transportation. Under-ground tubes or chutes for heavy mail from large Department Stores, multiple shops, banks etc. is another instance of this kind. It is, however, a public utility or civic service in India still, rather than an ordinary means of transport; and as such its economics are scarcely recognised, and much less appreciated. A comprehensive National Plan must, nevertheless, take full account of it; and the National Planning Authority, if and when established, must consider its potentiality and provide for its fullest development.

K. T. Shah.

INTERIM REPORT OF THE TRANSPORT SERVICES SUB-COMMITTEE

CHAPTER I.

The existing transport facilities in India can be classified under four heads, viz.

i. Railways;
ii. Roads;
iii. Coastal, Overseas and Inland navigation; and
iv. Air Transport.

Table I gives the route mileage open for traffic for different years. From 37,266 in 1921-22, the railway mileage has increased to only 43,128 in 1936-37.

Table II gives the comparative railway mileage figures for different countries of the world. We see that India fares badly in comparison with other countries. Even under existing conditions compared with other countries, railway facilities are inadequate; when the plan comes into operation greater transport facilities will be demanded and so the inadequacy will be felt more.

Table III gives the amount of traffic carried by railways for various years. In 1921-22 the number of passengers and goods carried were 5,69,684,000, and 90,042,000 tons respectively; while in 1936-37 it was 5,22,076,000 and 116,407,000 tons respectively, showing an increase even without planned economy at the rate of 17,57,000 tons yearly in Goods traffic.

Table IV gives the financial results of railways. The capital at charge in 1919-20 was Rs. 5,66,37,77,000, which increased to Rs. 8,80,12,80,000 in 1936-37.

Table V gives the financial results in respect of railways earned by the state. The return on the capital at charge of all the railways was 4.33 per cent.

Table VI gives the extent of roads for various provinces. The roads have been divided between metalled and unmetalled roads. From this table we see that the Province of Madras is well provided with roads compared with other Provinces. The average road mileage for every 100 sq. miles of the total area, and for every 100,000 of the population is given in table VI A.

Table VII gives the particulars as regards the wealth of communications in various parts of India. Here also we see that Madras fares well compared with other Provinces.

Table VIII gives the details of the expenditure on extra municipal roads. Statements I, II, III and IV give the particulars of the Road Fund at the end of 1937-38.

It is a very difficult thing to get the figures for the traffic carried by roads, as most of the motor services are unorganised ,and they do not keep or at least do not publish the statistics of the traffic carried, whether goods or passengers. But table IX gives some idea of the losses suffered by the railways due to motor competition. It is estimated that the railways suffered losess to the extent of Rs. 187 lakhs due to motor competition. This, of course, does not indicate in any manner the extent of the possibility to which this form of transport can be developed and utilised under carefully planned economy. Nor does it prove necessarily that in proportion as road transport of this kind develops, the railways must suffer a loss. It is simply a matter of properly distributing the traffic and co-ordinating the services.

The number of heavy motor vehicles, buses and lorries may also give some idea of the extent of motor competition with railways at the present time. Table X gives us the number of motor vehicles. In 1935-36, the number of heavy motor vehicles was 39,836 and in 1937-38 it was 39,172.

Table XI gives the details of operation of inland navigation works for British India. In 1929-30 the length of canals open for navigation was 4,008 miles and in 1936-37 it was 3721—a steady decline in the use of this form of transport facility. The number of passengers carried by inland water transport service for the same years was 31,22,364 and 24,57,665 respectively. The quantity of goods carried in the same period was 1,37,62,801 and 1,37,24,530 tons respectively. The carriage of goods by inland water transport does not show the same fall as that in regard to passengers.

Tables XII, XIII, XIV and XV give details of the working of canals, traffic carried, etc., for the U. P., Bihar and Orissa, Bengal and the Madras.

Table XVI gives the traffic movement on railways and canals in India. In 1931-32, traffic carried in canals was

12,100,019 tons, while those over railways was 99,314,000; in 1936-37 that on canal was 13,724,530 and over railways 1,16,407,000 tons.

Table XVI A gives us the density of traffic per mile of canal and railway. The density of traffic per mile of canal was 3686 tons and for railway it was 2699 tons.

Table XVII gives the comparative figures of canal navigation for France and India. In France the traffic per mile of canal was 7915 tons, while for India it was only 3686.

As far as the Province of Bombay is concerned, except the two Gujerat rivers, the Tapti and the Narmada, there is hardly any river at present which is navigable to a great extent. As far as the Madras is concerned, the facilities for river transport are as follows :—

1.	Godavari Canal	500	miles	(about)
2.	Dummagudan ,,	2	,,	,,
3.	Godavari River	188	,,	,,
4.	Krishna Canal	400	,,	,,
5.	Buckingham Canal	258	,,	,,
6.	Vedernarayan ,,	35	,,	,,
7.	K. C. Canal	73	,,	,,
8.	West Coast Canal and connecting backwaters :	400	,,	,,
		1856	,,	,,

There is not much scope for improving items 1 to 7. Proposals are in hand for item No. 8, but no definite decision has been taken. The facilities for an efficient water transport service in the province consists in the proper maintenance of the water channel, wharves, godowns, cranes, and other equipment, and the provision for the efficient lights. It is also necessary that signal stations be provided for. Where a river channel is liable to be silted up, it is necessary to provide adequate dredging facilities to maintain a good navigable channel throughout the year. Navigation would, of course, be impeded during periods of floods in any river liable to such occurrence, but that would be a very transitory impediment, and need not

hinder the planning authority from developing that form of transport if they think it otherwise suitable.

In the U. P. with the single exception of the Gogra river and the Ganges below Allahabad, the rivers of the Province do not lend themselves to water transport. The Upper Ganges Canal and the Agra Canals were originally designed to serve the dual purpose of irrigation as well as navigation. With the increase of railway communications and thanks to the competition of that favoured form of transport, inland water transport, despite this very low rates charged, languished.

With the recent growth of motor transport inland navigation is likely to be affected adversely. Navigation on the upper and lower Ganges Canal is now confined to the following reaches :

(a) Lower Ganges Canal,
  i. Main line head to mile 34.
  ii. Couper Branch Mile 70.
  (Kenansa) to mile 135.
(b) Upper Ganges Canal Head to mile 87.

There is very little scope for any appreciable extension of navigation along the canals of the U. P. because of the fact that the whole of the province is traversed by a vast net-work of railways, and a rapid development of road motor transport, which would make the water transport uneconomic in comparison. All available facilities, however, on the perennial rivers of the Province, like the Ganges and the Jumna, should be utilised to the full under a properly planned distribution of traffic.

River Navigation in U. P.

The main rivers are the Ganges, the Jamuna, the Gomti and the Gogra. During the whole period from about October till April, the entire supplies flowing in the Ganges, the Jamuna and the Sarda are diverted, at the various headworks, into canals for irrigation. For purposes of navigation they may be regarded as providing very limited facilities in the central and western parts of the province in which are concentrated the industrial and commercial centres. Supplies in the Gomti and the Gogra are not liable to such violent fluctuations but unfortunately the

Gomti rises only in the Pilbhit district and the Gogra flows through the Terai and the semi-terai belts for most of its length. Neither of these rivers traverses any industrial or commercial areas which could take advantage of such navigational facilities as they provide. Lesser rivers of the provinces are not suitable for navigation for the greater part of the year, because they are dry in some parts and also in the cold weather. Another difficulty is the instability of the beds of large rivers, which, particularly in Bengal, are constantly and suddenly shifting. This naturally, discourages any considerable investment of capital on their development as arterial transport facilities.

Bengal has got excellent riverine transport service for which there are boats and steamers which regularly ply. Facilities for an efficient water transport curtailed owing to silting up of rivers at many places. The aggregate length of the canals, canalised rivers, and channels open to navigation is about 1184 miles, inclusive of the Sunderbans. Both the principal Bengal ports—Calcutta and Chittagong—are river ports; and their example may serve to show the possibility of developing other inland centres, like Patna, as great river ports.

In Sind, the Indus used to be the main highway of commerce right upto Attock from the sea, until very recent times. Even now, its use as a means of transport is by no means insignificant, though the construction of the Sukkur Barrage has created a physical obstruction to the movement of traffic on the river. The railways on either bank of the Indus and a fair service of roads serve to discourage further the revival of river navigation. But the great length of the river, and its new channels constructed for irrigation offer a considerable promise, which needs to be fully explored.

In Bihar, the Patna and Arrah Canals provide inland water transport facilities. The river Ganges is an important means of communication between the U. P. on the West and Bengal, Assam and the sea on the East. Water transport being relatively slow, may not be suitable for costly articles; but for cheaper and heavier goods, it has great possibilities in this Province. Cargo and passenger steamers ply regularly along the Ganges even now from Benares through Patna right down to Calcutta, while Son and the Gogra have also possibilities for similar development.

India has a coast line of 4,000 miles. The total value of her coastal trade for 1936-37 was Rs. 1,65,48,88,000. Table XVIII gives the value of coastal trade for different years.Total number of passengers carried in Native passenger ships for short voyages along the coast in India and Burma is shown in table XIX and for long voyages in table XX.

The total value of the foreign sea-borne trade of India is given in Table XXIII. In 1924-25, the value of the sea-borne trade was Rs. 7,579,730,000 and in 1936-37 it was Rs. 3,759,237,000. It has been estimated that the share of Indian ships in the foreign trade for the year 1936-37 was 1.1 per cent; that of British vessels 64.8 per cent; that of Native Craft 6 per cent, and other foreign vessels 33.5 per cent.*

It is very difficult to get the figures for the total shipping earnings, and the figures (57 crores, out of which 50 crores is carried away by foreign steamship companies) computed by Mr. Haji in the Economics of Indian Shipping are more or less out of date. But we can say, that the share of Indians in the coastal trade has increased. The earnings of the Scindia Steam Navigation Co. have increased from Rs. 87,24,051 in 1934-35 to Rs. 137,57,700 in 1938-39. (Table XXII). But the position of Indians in carrying overseas trade is the same.**

The total value of Government's stores imported, exported and re-exported to and from British India is given in Table XXIV. In 1924-25 it was Rs. 8,80,66,000 and in 1936-37 it was Rs. 2,50,49,000.

Looking at the above figures of available carriage of goods and passengers one may well wonder about the absence of Indian Mercantile Marine.

The handicaps in the development of Indian Mercantile Marine are many. The chief of them is the opposition of the foreign shipping concerns with secure financial background and now operating and enjoying practical mono-

* Review of Trade of India.

**In the last two or three years 40 per cent of the earnings of coastal traffic in freight has gone to the Scindia Steam Navigation Co. 10 per cent to the Asiatic Steam Navigation Co. and 50 per cent to foreign shipping companies. Mr. Master gives figures to disprove this statement.

poly of Government as well as private business. The 'Deferred Rebates' System also hinders the development of Indian Mercantile Marine. Attitude of the Government which in all other countries is sympathetic, nay patronising, is of simple inactivity in India. Controlled by foreigners as it is, it always pursues the policy dictated by English financial interests. It has failed in its duty to satisfy the aspirations of Indians to have their own mercantile marine. Mr. Master says that counties should be given to ship-building industries, also. Government official should be asked to travel by Indian ships.

By importing and exporting Government stores in Indian owned vessels and assuring Indians their full support in the enterprise, by giving bounties to ship-building industries, assuring them of contracts of carrying mails, the Government can help Indians to develop their own mercantile marine sufficient to meet all the needs of our overseas commerce.

Table XXVI gives the number of companies engaged in navigation, by provinces. There were 36 navigation companies having the authorised capital of Rs. 32,03,55,000 and paid-up capital of Rs. 26,177,747; Companies working in India, but incorporated elsewhere were 9 in number having an authorised capital of £56,339,582 and paid-up capital of £14,535,032.

Table XXV gives the details of the extent of ship-building industry in India. In 1917-18 the total number of ships built at Indian ports was 142 with a total tonnage of 11,808; in 1936-37 it was 55 with a total tonnage of 2418. The industry has been virtually killed; and the efforts now reported as being made to revive it will need every attention and fostering care from the Planning Authority.

Compared with other countries Air Transport Facilities are very inadequate in this country. From Table XXVII we see that the mileage of air routes in Great Britain, France and U.S.A. was 11,670; 21,450; and 47,667 in 1933 respectively, while in India it was only 5180.

The position did not improve much even in 1937 when air route mileage for Grt. Britain, France, U.S.A. and India was 26,679, 38,750; 63,656 and 83,25 respectively.

Table XXXVI gives the names of the operating companies in India and Burma. While Table XXXVII gives

their capital. The total authorised capital of the Air Transport Companies registered in India was Rs. 46,30,000, while subscribed capital was 26,32,708. In addition to these Indian Companies there are operating in India through services run by foreign companies. The British regular air transport services carried 79,100 and 243,805 passengers in 1933 and 1937 respectively. The external mails carried by them in the same years were 85 and 667 tons respectively. Table XXVIII gives the details of miles flown, passengers, mails carried, etc. in different years. In recent years, until interrupted by the war, this form of transport registered very rapid growth; and gave a great promise of still more rapid and accelerating expansion. Mileage flown, number of passengers and mails carried by internal regular air services in India and Burma are given in Table XXIX.

In 1937, the number of miles flown was 622,193, passengers carried 1,178 and 61.2 tons of mails.

Table XXXIII gives us details of the exports and imports of general merchandise, precious stones, bullion and currency note at Karachi and Rangoon. The total value of exports and imports at these two places for the years 1931-33 was Rs. 104,37,498 and in 1937 it was 105,51,869. Table XXXIV gives the number of passengers and weight of freight carried by all scheduled air services to and from India. Table XXXV gives the total number of passengers and amount of freight and mails carried by Tata Sons Ltd., Indian National Airways Ltd., Air Services of India, Ltd., and Irrawadi Flottilla Airways Ltd.

CHAPTER II.

The aim of the Planning Commission being at least to double in ten years the total volume of material goods produced in the country, the same will have its reaction on the transport facilities needed.* The demand for the transport facilities will go up, and this may be met in one of the two ways, either by better utilization of the existing facilities or by extending the facilities. First, we should try to meet the new demand by the better utilization, and internal economics, of the existing facilities. And if after all this has been achieved further facilities are required, we shall have to think which of the several types of transport facilities mentioned above should be provided; and in what proportion, if more than one of these would serve them. The suitability of a given form of transport motor, of course, vary with the geographical as well as economic conditions in each particular region within the country; and it will be for the Planning Authority to determine in consultation with their expert advisors on the subject, as to what particular form of transport needs development in a given region and upto what degree.

The Wedgewood Committee has rightly observed that even with the expected increase in traffic in future, the existing railway facilities are sufficient. The stock of the locomotives is excessive. The stock of carriages also is high, and should be more than equal to the requirements of a normally increasing traffic.

In the case of wagons the stock seems to be higher than needed for the present traffic and its likely growth, with the planning of transport facilities, establishing storage centres for goods to be marketed at various places, within each region its own produce as far as possible and other such organisation, the existing wagons could be better utilised.

We have at present a high percentage of wagons and locomotives awaiting repairs, which proportion can easily be reduced. Other similar economies and savings already suggested by expert committees, and listed below by way of illustration, will serve to show the margin already avail-

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*Mr. Master asks to what extent it is intended to increase the number of ships in the country.

able in the existing railway facilities to deal with increased traffic without further capital investment in this enterprise.

As far as the motor transport is concerned, we have, where there are motorable roads, many services running without being properly co-ordinated, and carefully planned so as to render a real service to the economy of the region served, and also make a profit for themselves. The services are run by small men as a rule, with one or two vehicles at most, without any proper facility for repairs, without any reasonable provision for depreciation, without any forethought about the kind of traffic to be carried, its volume and regularity. Naturally, therefore, these services are not remunerative to their owners, nor helpful to the community they serve. They work unavoidably on a basis of cut-throat competition in order to attract traffic with uneconomic fares as much as possible. Many buses run empty. So too is the case with the lorries. Under a proper plan of national economy, the existing motor transport facilities will be so co-ordinated, **inter se,** and with other forms of transport and so worked and developed as to be able to cope with the increased traffic in passengers as well as freight very profitably as well as economically.

The existing rates and fares on road transport, as well as on the railways competing, have been framed with a view rather to help the experts of the country, than the industries, or producers within the country. Rates to Ports are more favourable than between two inland centres within the same distance.

This problem perhaps may be due to the fact that the principal Ports are connected by railways in such a manner that foreign trade should converge to and be concentrated in as few centres for export and import as possible. This reduces the number of outlets for the produce of the land, and consequently the existing rates and fares on Indian Railways are calculated to meet all operating expenses including interest on the capital at charge and in addition to make a contribution to the Central Revenues as settled in 1924. Compared with other countries they may be low in absolute money costs; but taking into consideration the poverty of the people, they bear heavily.

As the capital invested in these Railways is very heavy there is the necessity of comparatively higher fares and rates than the productive capacity of the people can bear.

And as the central finances have been charged with heavy non-productive expenditure, a substantial contribution from the railways is inevitable. But we should try to utilise the existing facilities more intensively, thereby spreading over the heavy overhead costs to many units. Intensive use of all available material and rigid economics in its working will help to reduce high charges. It may be mentioned in passing that because of the high capital investment on the Indian State Railways, other forms of alternative and competing transport service, which may be more in accord with the country's needs cannot be developed, lest the profits of the Railways be endangered. Even radical improvements on Railways themselves,—e.g. substitution of electricity for steam power or of aluminium for steel in rolling stock,—cannot be easily undertaken for the same reason. Railways are, therefore, likely to prove more uneconomic and burdensome from the standpoint of planned national economy, than might appear from their rates and fares.

We have to consider the problem, whether Railway rates should indirectly, if not directly, aid India's productive organisation, in agriculture as well as industries. The problem involves the question whether the Railway rates should be a price for service rendered, or a tax levied by a sovereign authority for its general needs. In the larger interests of the country, and taking a long range point of view, the Railway rates must be normally regarded, and framed as a price for the service rendered. Railways must be run on strict commercial principles, and if, after meeting all the obligations, we find a surplus remaining, then the weak, but important from the community's point of view, should be helped by quoting lower rates, granting rebates, etc.

Railway rate making, under Planned Economy, would thus be considered from the standpoint, mainly of aiding the fulfilment of the Plan. Thanks to the resulting increase in the total volume of production, which the Plan aims at bringing about, there will be increased demand for Transport Service. The general reorganisation or reconstruction effected by the Plan,—e.g. by a compulsory and universal system of education for all children of school-going age adding immensely to the number of children in school, and the consequent increase in their demand for transport service; or the increase in industrial employment and the consequent transfer of population from agriculture

to industry in appreciable proportion—will also work in the same direction. To a large extent, the Railways can meet this increased demand by a better, more economic and more efficient use of the existing material and equipment. To some extent the railway service would have to be supplemented by improved or increased road facilities. Some relief, again, will be afforded to the Railways by the more intensive use of the existing inland water transport facilities, and the development of new ones wherever the same could be developed with economy and safety. And only when all these considerations and expedients have been fully taken into account and disposed of, will it be possible to decide as to where, and how much, additional railway facility is to be provided in response to the needs of the Planned Economy. Exactly in what proportion new roads and better road transport facilities must be provided to supplement or substitute the Railway transport, and in what proportion or what parts of the country water transport will be developed and provided, and what traffic assigned to it, will, of course, rest with the National Planning Authority to decide, after allowing for all considerations bearing upon the requirements of Planned Economy.

Having a coastline of something like 4000 miles in length, India has great advantages for developing coastal transport. But due to the indifference of Government,—perhaps intentional,—the development of ports in India except the five major ports, has been neglected. The result is that so many of them have silted up. Now to open them up again would mean considerable capital expenditure. The development of this alternative might occasion a competition with railways which also Government would not quite like. Travel and carriage by sea being relatively cheap, it is necessary, from the point of view of the relatively poorer traffic or traveller, to develop this form of transport as an integral part of the Planned National Economy, wherever the necessary facility is available.

People in the Konkan Coast, for example, being too poor to pay bus or railway charges have to go without transport facilities in the absence of suitable and regular coastal transport facilities.

Under the Planned Economy, and national self-sufficiency as our ideal we have to take into consideration the extent of the requirements of transport facilities for our

overseas trade as well as passenger traffic. The construction of an adequate Mercantile Marine,—adequate both for coastal as well as for overseas service,—and the development of that form of transport facility, Indian owned and Indian managed, will likewise be a matter for the consideration of the Planning Authority.

CHAPTER III.

In providing adequate transport facilities under Planned Economy, we shall have to take into consideration the existing volume, variety and investment in such facilities the nature and volume of traffic to be provided for, the possibilities of nationalisation and co-ordination in the existing transport system and the geography or topography of the place.

Railway facilities are costly in relation to the small unit size of operation in this country, whether in agriculture or industry. These can, therefore, be best adapted to the traffic in larger unit consignments, for longer distances as unit hauls, and relatively more valuable in character. The Planning Authority would have to make the necessary adjustment, and arrange for a co-ordinated distribution of the entire traffic, if this principle and the criteria for its adoption are adopted. Motor transport facilities by road will have to be developed, so as to provide a form of transport more in keeping with the scale of production by the average Indian agriculturist. This will mean constructing additional roads all over the country, whether as feeders to railways, or in addition and by way of supplementing the railway. Before constructing roads, a Plan will have to be prepared as to where and how much road facility is needed; how they are to be co-related to other forms of transport, in what way, and by what agency, these roads, and their equipment with the necessary vehicles, etc., to be provided; and by what authority the entire road transport service is to be operated.

A well-organised automobile industry plant is an absolute necessity for planned economy in India. Such an industry established in the country, will not only provide cheaper buses and lorries, but also provide more appropriate transport facilities in accordance with the scale of operations in India. To avoid needles competition between these two forms of transport, i.e. Roads and Railways,—it will be necessary to distribute or allocate to each the traffic which is appropriate, as noted above.

As far as the extension and development of river, or inland water transport facilities are concerned, all the provincial governments are of opinion that the existing facilities should be improved first, before thinking of making any extensions, by widening, dredging the rivers

or constructing new navigation channels, and providing signal stations, etc. The existig facilities need improvements, and should be used intensively pending development of new ones.

As illustration of this remark, it may be added that there are great possibilities for the development of river transport in the Province of Bombay. Both Surat and Broach are situated on big rivers which could be made sufficiently navigable for big boats to come into the cities. There may be possibilities of making cross channels connecting the rivers which flow into the sea. The city of Ahmedabad could be linked up with the Bay of Cambay.

In Madras there is not much scope for improving the Godavari, Dummagudam, Kistna, and other canals, except on the Godavari for a short distance inland and the West Coast canals and connecting backwaters.

In Bengal facilities for water transport are restricted owing to the constant shifting of river-beds, and silting up of rivers at many places. If sufficient care is taken of the river system, it would be possible to develop and increase these possibilities by maintaining adequate channels in the existing rivers, or making navigation canals from those rivers, interlinking the river system, and providing ports facilities inland on the rivers.

CHAPTER IV.

In a huge continent like India, commodities have to be carried over long distances, and so the transport costs bear heavily in the selling price.

With a proper co-ordination of exchanges within each convenient regional unit, the volume of goods to be carried over long distances will be reduced very considerably. There will be no cross freight charges or needless duplication of carriage of the same goods over the same distance. If, the principle that from the local produce of each unit the local demand must first be met as far as possible is accepted in organising planned economy, we can effectively reduce the total transport service needed in proportion to the volume of traffic to be carried, and so the aggregate cost of that service. An example may be cited. At present people at Ahmedabad or nearabout it, may be using cotton goods produced not at Ahmedabad, but in Bombay which means unnecessary transport charges, and a social waste. Under a carefully organised planned economy, convenient regional units can be set up, each so constructed as to have a sufficiently varied produce as well as demand for commodities; and services which could make that unit fairly self-sufficient or capable of such organisation in regard to demand and supply and their co-ordination as most efficiently to utilise the transport service.

This principle has also a bearing on the localisation of industries. If we are going to save needless carriage of goods and thereby avoidable transport costs, as far as possible, the industries would have to be so located or established or developed in such regions as to avoid the needless transport of commodities over long distances.

By establishing markets and storage centres for goods to be marketed at convenient spots, we can likewise minimise the demand for transport services and reduce the pressure on the equipment needed for the same. When the rolling stock is available, then stored goods can be transported to their destination. In this way we can make full use of the rolling stock having thereby little idle overhead.

With the rise in the standard of living, and in the increase in the total volume of goods produced in the country, the demands for transport facilities will increase

but by co-ordinating and rationalising the service, we can keep the pressure down, and not provide increased facilities exactly in proportion to the increased volume of production.

By vesting control and management in one Central Organisation, we can co-ordinate the various forms of transport, allocate to each its share in the carriage of goods and passengers, and thereby keep the cost at the lowest possible level and yet provide service with the widest possible margin.

TABLE VII.

Particulars of wealth of communications on the basis of population and area in areas having a population density of 100 per sq. mile and over

	Area involved sq. miles	Avg. density of population per sq. mile	Proportion of area. More than 10 mls. from any sly. per cent.	Length per 100sq mls. of area. Rlys. Mls.	Roads. Mls.	All motorable Roads. Miles.	All Roads publicly maintained Miles.	Area per mile of Rlys. sq. Mls.	M Roads. sq. Mls.	All motorable Roads. sq. M	All roads publicly maintained sq. M.
Madras	122,620	382	59	3.56	19.15	22.10	26.80	28.00	5.23	4.52	3.73
Bombay Presy.	77,035	284	54	3.25	12.20	17.40	23.00	30.80	8.20	5.74	4.35
Sind	21,670	118	32	3.68	0.23	0.23	30.00	27.00	18.40	108.40	2.56
Bengal	71,684	679	40	4.81	4.87	4.87	55.40	20.78	20.50	20.50	1.80
U. P.	93,000	506	28	5.32	8.20	8.20	35.00	18.80	12.20	12.20	2.85
Punjab	73,000	290	26	4.52	5.05	12.12	29.10	22.00	19.80	8.33	3.42
Bihar & Orissa	83,161	453	39	4.00	3.76	3.76	39.40	25.12	21.00	21.00	2.54
Central Provinces	85,581	167	55	2.67	5.56	7.80	8.77	37.45	17.98	12.82	11.40
Assam	32,590	236	29	3.65	1.00	1.00	22.00	27.40	100.00	100.00	4.42
N. W. F. P.	7,231	265	39	3.20	8.07	11.60	22.00	31.50	12.40	8.60	4.50

(Table taken from Mitchell "Report on Road and Rail", Page 80).

	Persons per mile of Rlys.	M. Roads.	All motorable Roads.	All roads publicly maintained.
Madras	10,700	1,950	1,720	1,420
Bombay Presy.	8,740	2,323	1,690	1,235
Sind	3,450	55,350	55,355	327
Bengal	14,117	13,932	13,932	1,226
U. P.	9,500	6,160	6,160	1,450
Punjab	6,400	5,800	2,400	1,000
Bihar & Orissa	11,400	9,500	9,500	1,150
Central Provinces	6,245	3,005	2,147	1,908
Assam	6,720	25,000	25,000	1,177
N. W. F. Province	8,270	3,290	2,280	1,200

TABLE VIII.

Extra Municipal Road Expenditure in India, in Rs. (lakhs).

Year.	From prov. & local revenues on original works. Roads & bridges.	Road maintenance.	Total	From Central Road Fund		Total expenditure		Grand total.
				Original Works.	Maintenance	Original works.	Maintenance.	
	1	2	3	4	5	6	7	8
1913-14	169.6	215.0	384.6			169.6	215.0	384.6
1927-28	218.6	437.2	655.8			218.6	437.2	655.8
1928-29	204.5	439.3	643.8			204.5	439.3	643.8
1929-30	186.0	450.0	630.0			180.0	450.0	630.0
1930-31	201.4	443.5	644.9	26.9		228.3	443.5	671.8
1931-32	112.1	392.2	504.3	53.4		166.5	392.2	557.7
1932-33	68.3	366.8	435.1	46.9	0.1	115.2	366.9	482.1
1933-34	59.7	373.6	433.3	38.5	0.3	98.2	373.9	472.1
1934-35	59.2	375.8	435.0	48.9	0.4	108.1	376.2	484.3
1935-36*	69.1	416.6	485.7	77.0	0.7	146.1	417.3	563.4
1936-37*	74.8	430.9	505.7	95.2	0.9	170.0	431.8	601.8

* Loans in C. P. of Rs. 3.9 lakhs in 1935-36 and Rs. 7.5 lakhs in 1936-37, taken from the Central Road Fund are not included.

(Information supplied by I.R.T.D.A. Ltd.)

TABLE IX.

The following table gives the losses of the passenger traffic suffered due to motor competition by the railways in different provinces. Figures of the losses of the carriage of freight not available. (Report on the present state of Road & Rly. competition, Mitchell, page 12).

	Estimated annual losses to Railways due to Motor competition, in Rs. lakhs.										
Province.	A. B.	B.B. & C. I.	B.N.	B.N.W.	E.B.	E. I.	G. I. P.	N. W.	M. S. M.	S. I.	Total.
Madras	—	—	1.50	—	—	—	—	—	15.74	13.50	30.74
Bombay	—	6.65	—	—	—	—	7.50	—	4.70	—	18.85
Bengal	0.31	—	0.86	—	5.00	4.22	—	—	—	—	10.39
United Provinces	—	14.52	—	5.00	—	21.77	4.13	—	—	—	45.42
Punjab	—	—	—	—	—	—	0.67	33.00	—	—	33.67
Bihar & Orissa.	—	—	2.86	—	—	4.02	—	—	—	—	6.88
Central Provinces	—	—	9.00	—	—	—	6.75	—	—	—	15.75
Assam	0.25	—	—	—	—	—	—	—	—	—	0.25
N. W. F. P.	—	—	—	—	—	—	—	1.33	—	—	1.33
States	—	13.83	—	—	—	—	1.45	4.67	5.17	—	23.12
	0.56	35.00	14.22	5.00	5.00	30.01	20.50	39.00	23.61	13.50	186.40

(Kirkness Mitchell Report)

TABLE X

Number of Motor Vehicles.

Year.	Total No. of vehicles.	Heavy motor vehicles and buses.
1935-36	161,812	39,836
1936-37	171,463	40,941
1937-38	146,429	39,172

TABLE XI.

Details of operation—Inland Navigation Works for British India.

Year	Length of Canals open for navigation miles.	Total No. of Boats plying Cargo.	Total No. of Boats plying Passengers.	Quantity of Cargo carried Tons.	Value of Cargo carried Rs.	No. of passengers carried.	Quantity of Cargo carried by rafting.
1929-30	4,008 3|4	192,434	22,751	1,37,62,801	46,05,08,452	31,22,364	Cft. 91,68,325 Ton. 97,21,008
1934-35	3,917 7|8	260,423	31,917	1,40,919,561	37,56,59,805	24,72,931	Cft. 91,08,216 Ton. 29,28,198
1936-37	3,721 5|8	264,115	23,723	1,37,24,530	38,70,56,916	24,67,665	Cft. 1,08,96,659 Ton. 2,59,396

TABLE XII.

Traffic Canals in the U. P. during the year 1937-38.

		Ganges canal
Length of Channel open for navigation	(Upper 213) miles	
	(Lower 123) „	336
Total Receipts Rs.		10,000
Maintenance charges including navigation establishment		3,064
Net Revenue		6,936
Total registered tonnage of cargo tons		31,819
Total ton milage.		12,62,190
Total estimated value of the cargo Rs.		4,13,789

TABLE XIII.

Traffic on canals in Bihar & Orissa in 1935-36.

	Orissa	Sion.	Orissa Coast.	Total.
Length of canals open for navigate miles	205¼	197	95¼	497¾
Total Receipts Rs.	69,246	36,123	4,665	1,10,034
Canal tonnage of boats Tons.	254,119	74,233	30,684	3,59,036
Estimated weight of boat cargoes	107,961	66,702	12,806	1,87,469
Estimated value of cargoes Rs.	6,717,624	17,05,849	6,79,220	91,02,693
Estimated value of rafts Rs.	161,868	3,12,053	4,760	47,867

(Figures for passengers, net revenue, maintenance charges etc., not available).

TABLE XIV

Traffic on canals in Bengal during 1936-37.

	Midnapore Canal	Hijilli Tidal Canal	Orissa Coast Canal	Calcutta & Eastern Canal	Sunderbans Steamer route.	Madaripur Riv. routes.	Total
Length of canals for navigation Miles	65.31	49.75	54.504	834	350	38	
Total Receipts	Rs. 10,440	53,680	25,722	342,722	79,954	169,860	682,378
Maintenance charges, including special navigation establishment	Rs. 52,107	19,692	14,301	240,287	38,408	110,110	4,74,905
Net revenue of the year	Rs. —41,667	33,988	11,421	102,425	41,546	59,750	207,473
Total number of cargo, passengers & empty boats	4,918	10,816	10,190	77,339	—	29,158	132,421
Total ton mileage	Rs. 587,770	2,511,476	15,17,584	59,26,935	—	4,31,25,414	5,36,09,179
Total estimated value of cargo	Rs 12,05,466	20,83,639	18,17,052	3,54,13,280	—	8,02,81,346	120,800,783
Total number of passengers	600	3,074	1,539	13,216	—	86,242	10671

TABLE XV

Traffic on the Principal Navigable Canals in the Madras Presidency during 1937-38.

	Godavari Canals	Kistna Canals	Kistna East Band canal.	Kurnool Cuddapah Canal	Buckingham Canal	West Coast Canals	Dummagudem Canals	Vedaraniyam Canals	Total
Length of canal open for traffic miles	492 1/8	384½	35½	75	276½	121	2	42 1/8	1428¾
Total receipts Rs.	207,999	119,599	516	72	105,332	19,478	11,143	690	464,829
Maintenance charges including special navigation establishment	169,053	130,099	2,623	—	212,778	—	8,697	5,016	528,266
Net revenue	38,946	—10,500	2,107	72	—107,446	19,478	2,446	—4,326	—63,437
Number of passengers	986,763	163,335	60,120	—	128,561	—	155	540	13,39,474
Estimated value of cargo Rs.	79,635,428	50,390,428	613,630	—	10,768,933	2,425,284	512,984	758,396	145,105,083
Total number of boats plying cargo	64,765	10,113	289	—	8,758	—	106	137	93,221
Total number of boats plying for passengers	6,860	2,165	25	—		—	3	—	
Total tonnage cargo boats Total tonnage cargo boats passengers	8,49,167	800,684	27,369	—	199,446	—	2,040	884	18,86,590

TABLE XVI

Traffic Movements on Railways & Canals in India

Year	Traffic on canals. Tons.	Weight of goods carried by railways in tons.
1931-32	12,100,019	99,314,000
1933-34	11,688,370	102,894,000
1935-36	13,373,318	115,506,000
1936-37	13,724,530	116,407,000

TABLE XVI A

Density of traffic per mile of canal	Density of traffic per mile of line.
Tons 3,686	Tons 2,699

TABLE XVII

Canal Navigation—Comparative Traffic Density

Country	Year	Length	Tonnage of total traffic	Traffic per mile.
France	1935	6,036	47,775,00	47,915
India	1936.37	3,721	137,245,30	36,856

India has a coast line of 4,000 miles. The total value of coastal trade for different years is given below.

TABLE XVIII

1917-18	Rs. (1000)	1,30,97,54
1919-20		2,23,19,54
1924-25		2,11,54,33
1929-30		2,03,25,39
1934-35		1,67,33,92
1935-36		1,61,84,59
1936-37		1,65,48,88

(Statistical Abstract of India)

TABLE XIX.

Number of passengers carried in Native Passenger Ships :

Year.	Total to ports within the province.	Total to Ports in India.
1924-25	114,27,848	649,941
1934-35	10,33,811	484,454
1935-36	10,53,733	478,441
1936-37	10,68,292	464,720

TABLE XX.

Passengers carried by Native Passenger Ships on long voyages outside India :

Year	Passengers
1924-25	28,376
1934-35	33,303
1935-36	48,038
1936-37	50,562

TABLE XXI

The following table gives the number of Haj pilgrims :

Year	Pilgrims
1924-25	4,975
1935-36	26,186
1936-37	22,156

TABLE XXII.

Statement showing the total cargo and passengers carried on the coast of India, Burma and Ceylon and pilgrims carried between India and Jeddah and the total freight and passage money earned by (Scindia) during the years 1934-35, 1935-36, 1936-37, 1937-38, and 1938-39.

Year	Cargo carried on the coast in tons.	Passengers carried on the coast.	Pilgrims carried between India and Jeddah	Total freight and Passenger money earned
1934-35	11,07,901	57,859	nil	Rs. 87,24,051
1935-36	11,18,850	58,476	nil	Rs. 93,32,562
1936-37	12,78,688	56,612	nil	Rs. 113,58,035
1937-38	11,49,493	54,502	6,258	Rs. 124,52,307
1938-39	14,16,950	57,147	8,720	Rs. 137,57,700

TABLE XXIII

The total value of foreign sea-borne trade is given in the table

(Rs. 1,000)

Year	Exports	Imports	Total
1924-25	40,54,108	35,25,622	75,79,730
1929-30	32,41,330	27,75,394	60,16,724
1934-35	21,90,017	13,97,742	35,87,759
1935-36	2,102,656	14,42,125	35,44,781
1936-37	23,26,934	14,32,303	37,57,237

TABLE XXIV

Value of Government Stores imported, exported and re-exported to and from British India.

Year	Imported (Rs. 1,000)	Exported (Rs. 1000)	Re-exported Rs. 1000)	
1924-25	6,73,83	2,06,83	nil	8,80,66
1929-30	8,91,05	94,77	1,096	9,96,78
1934-35	2,29,60	2,478	339	2,57,77
1935-36	2,34,05	21,31	945	2,64,81
1936-37	2,48,08	976	265	2,50,49

TABLE XXV

Ships built in Indian Ports.

Year	No.	Total Tonnage * *
1917-18	142	11,808
1924-25	56	2,094
1929-30	20	1,017
1934-35	53	2,122
1935-36	50	1,816
1936-37	55	2,418

** Statistical Abstracts for Br. India.

TABLE XXVI.

The number of companies engaged in navigation by provinces, their authorised, subscribed and paid-up capital in 1934-35.***

Province.	No.	Authorised Capital Rs.	Subscribed Capital Rs.	Paid-up Capital Rs.
Bombay	6	231,00,000	1,88,85,095	1,84,00,042
Bengal	29	3162,55,000	95,52,377	74,89,540
Madras	1	10,00,000	4,15,630	2,88,165
Total	36	3203,55,000	2,88,53,102	2,61,77,747

Number, Description, and capital (in sterling) of Companies incorporated elsewhere than in India but working in India in 1934-35.****

Province	No.	Authorised C.	Paid-up C.	Debenture (In £)
Bombay	4	28,855,995	20,912,810	8,487,560
Bengal	15	27,483,587	20,289,243	6,047,472
Total	19	56,339,582	41,202,053	14,535,032

*** Joint Stock Companies in Br. India. P. 12

**** Ibid Page 36.

TABLE XXVII

Mileage of Regular Air Routes

Year	Great Britain.	India.	Br. Common Wealth of Nations	U.S.A.	France.	Germany
1933	11,670	5,180	32,670	47,687	21,450	71,228
1934	13,750	5,830	41,390	50,800	21,290	23,440
1935	18,739	6,395	53,291	52,461	24,451	22,291
1936	23,717	6,483	68,240	61,532	33,798	23,494
1937	26,679	8,325	79,875	63,656	38,750	31,880

TABLE XXVIII

British Regular Air Transport Services

Year	Miles flown.	Passengers Carried.	Outward Air Mail (External) tons.	Air Mails (Internal) tons.	Total Tons
1933	2,638,000	79,100	85	86	171
1934	4,557,000	135,160	122	128	250
1935	8,412,000	200,000	187	527	714
1936	9,584,000	236,300	325	652	977
1937	10,783,300	243,805	667	935	602

TABLE XXIX

Internal Regular Air Services in India & Burma

Year	Miles flown.	Passengers carried.	Mails carried tons.
1933	153,680	155	10.5
1934	345,771	757	21.3
1935	553,754	553	43.4
1936	496,539	349	49.4
1937	622,198	1,178	61.2

TABLE XXX

Air Mails from India & Burma

Year	Imperial Airways Ltd. & Indian Trans-Continental Airways Ltd. lbs.		K. L. M. lbs.		Air France lbs.		Total lbs.
	To the East.	To the West.	To the East.	To the West.	To the East.	To the West.	
1930	..	34,015	..	..	..	..	34,015
1933	No Record	54,178	1460	..	424	..	56,062
1935	6,677	93,859	57	111	1087	124	101,915
1936	11,785	107,592	115	136	677	133	120,438
1937	16,550	124,549	181	44	441	189	141,954

TABLE XXXI.

Air Mails to India & Burma

Year	Imperial Airways Ltd. & Indian Trans-Continental Airways Ltd. lbs.		K. L. M. lbs.		Air-France lbs.		Total lbs.
Year	From the West.	From the East.	From the West.	From the East.	From the West.	From the East.	Total
1930	39,364	..	96	..	..	..	39,460
1933	55,195	No record	4,731	1,319	834	268	62,347
1935	90,297	5,791	7,111	6,896	747	655	111,497
1936	105,701	17,265	10,338	1,841	1,101	736	136,982
1937	123,145	23,712	15,014	2,164	2,737	1,006	167,578

TABLE XXXII.

Total number of letters carried and brought by all the three Companies in, from and to India is given below.

Year	Total Weight lbs.
1930	73,475
1933	1,18,409
1935	2,13,412
1936	2,57,420
1937	3,09,532

TABLE XXXIII.

Exports and imports of general merchandise. Precious stones, bullion and currency notes at Karachi and Rangoon.

Year	Imports Rs.	Exports Rs.	Total Rs.
1931-33	63,57,600	40,79,898	104,37,498
1934-35	45,80,824	1,67,551	47,48,375
1936	80,13,341	2,67,821	82,81,162
1937	101,77,206	3,74,663	105,51,869

TABLE XXXIV.

Passengers and freight carried by all scheduled air services to and from India

Year	To & from Karachi.	To & from Rangoon.	Total No. of Passengers.	Freight to & from Karachi.	Frt to & from Rangoon.	Total Frt. carried to & from India.
1930	148	..	148	..	..	..
1935	1367	240	1607	68,948	8,751	77,699
1936	1737	453	2190	56,158	18,366	74,524
1937	1890	510	2400	79,852	12,708	92,560

TABLE XXXV.

The table gives the total number of passengers and freight and mails carried by Tata Sons Ltd., Indian National Airways Ltd., Air Services of India Ltd., and Irrawadi Flotilla Airways Ltd.

Year	Aircraft Mileage.	No. of Passengers.	Passenger Miles.	Mails south & north bound lbs.	Frt. lbs.	Ton Miles.
1933	137,280	8	5,285	23,485	293	..
1935	474,066	74	47,605	93,532	439	159.3
1937	595,139	1238	2,11,780	1,36,971	4462	1358.2

TABLE XXXVI.

The Air Craft Operating Companies at the end of 1937 were as follows

Company.	Services or other operations.
India.	
Indian Trans-Continental Airways Ltd.	Karachi Singapore (Operated jointly), with Imperial Airways Ltd).
Tata Sons Ltd.	(i) Karachi-Bombay-Madras. (Since extended to Colombo).
	(ii) Bombay-Cannanore-Trivandrum. (Seasonal, since extended to Trichinopoly).
	(iii) Bombay-Indore-Bhopal-Gwalior-Delhi. (Seasonal).
	(iv) Air Charter.
Indian National Airways	(i) Karachi-Lahore.
	(ii) Air Charter.
Air Services of India	(i) Bombay-Bhavnagar-Rajkot-Porbander.
	(ii) Air Charter.
Indian Air Survey & Transport Ltd.	Air Survey & Charter.
Indian Aviation Development Co., Ltd.,	Air Charter, Aeronautical Consultants.
Himalaya Airways Ltd.	(i) Hardwar-Ganchar (Irregular)
	(ii) Air Charter.
Burma.	
Irrawadi Flotilla & Airways Ltd.	(i) Rangoon-Yenangyaung.
	(ii) Rangoon-Tavoy.
	(iii) Air Charter.

TABLE XXXVII.

Capital of all the companies

Company.	Authorised C. Rs.	Subscribed C. Rs.	Paid-up C. Rs.
Indian Trans-Continental Airways Ltd.	10,00,000	10,00,000	10,00,000
Indian National Airways	30,00,000	12,32,388	11,31,818
Indian Air Survey & Transport	20,00,000	2,00,220	2,00,220
Himalaya Air Transport Survey	3,00,000	2,00,000	1,00,000
Irrawadi Flotilla & Airways Ltd.	4,40,00,000	..	..
Total	4,63,00,000	26,32,708	24,32,038
Indian Aviation Development Co., Ltd.		Figures Not Available	
Air Services of India Ltd.		" "	"

The number of Aircraft on the register increased from 127 in 1936 to 147 in 1937.

The total licensed personnel increased from about 387 in 1936 to 443 in 1937. The percentage of Indians holding licenses of all types rose to 64 percent from 58.5 per cent in 1936 and 56 per cent in 1935.

P.S. All the tables are compiled from the report in the Civil Aviation in India and Burma.

STATEMENT I.

Statement showing the position of road fund at the end of 1937-38.

	Gross receipts.	Lakhs.	Lakhs.
(1)	To end of 1936-37	960.95	
(2)	For 1937-38	144.36	1105.31
	Deduct Grant to Civil Aviation		5.97
	Net credit to the Road Fund		1099.34
	Deduct Reserve		
	From 1929-30 to 1937-38 including special contribution by oil companies in 1929 (Rs. 9,39 lakhs) and from the revenue surplus for 1934-35 (Rs. 40 lakhs)		181.25

(Contd.)

Gross receipts.	Lakhs	Lakhs
Net available for distribution		918.09
Amount distributed to Provinces (including Burma)	710.50	
Minor administrations & administered areas	26.24	
Indian States	103.81	840.55
Balance in hand at the end of 1937-38		77.54

STATEMENT II.

Statement showing the allocations made from the Road Fund and the expenditure incurred to the end of 1937-38.

Name of Province or State	Cost schemes approved to-date against provincial allocation Rs. lakhs.	Allocation in respect of the revenue upto 30-9-37. Rs. lakhs.	Expenditure upto 31-3-38 Rs. lakhs.	Balance on 31-3-38 Rs. lakhs.	Probable allocations during 13-8-39 Rs. lakhs.
1. Madras	200.34	128.29	75.65	52.64	22.80
2. Bombay	334.03*	153.91	125.68	28.31	25.16
3. Bengal	156.82	118.41	70.17	48.24	15.54
4. U. P.	111.65	51.59	46.57	5.02	8.64
5. Punjab	88.58	67.85	47.69	20.16	13.38
6. Bihar	54.15	28.73	13.00	15.73	3.94
7. C.P. & Berar	33.84	28.39	22.00	6.39	4.41
8. Assam	37.12	20.00	17.50	2.50	3.27
9. N.W.F.P.	30.52	16.12	15.04	1.08	2.42
10. Orissa	15.48	1.75	..	1.75	0.61
11. Sind	24.29	14.79	4.80	9.99	2.88
Total Minor administrations & administered areas.	35.51	26.25	21.94	4.31	5.15
Total provinces	1086.82	629.91**	438.10	191.81	103.05
Grand Total	1122.33	656.16	640.04	196.12	108.20

* Bombay proper Rs. 312.75 lakhs.
Sind prior to separation Rs. 21.28 „
Rs. 334.03 lakhs.

** Excluding Rs. 80.59 lakhs allotted to Burma and Shan states prior to separation.

STATEMENT III.

Position of the Reserve

	Lakhs Rs.		
Revenue to end of 1937-38			181.25
Estimated revenue for 1938-39 to 1941-1942			94.00
			275.25
Deduct Grants approved	Lakhs Rs.		
Special Schemes	213.57	(see statement IV).	
Experiments	8.09		
Road test track	1.10		
Indian Roads Congress	0.68		
Motor vehicles Insurance Committee	0.54		
Technical Sub-committee of Transport Advisory Council	0.05		
	224.03		
Cost of Administration upto 1941-42	0.05		
	234.94	say	235.00
Balance			40.25

STATEMENT IV.

Statement showing the position of grants approved from the erve as on 28-2-1939. (The figures exclude the grants approved by Standing Committee for Roads on 25th Feb. 1939 for allotment ng 1939-40).

	Grants lakhs Rs.
Madras	3.66
Bombay	5.38
Bengal	11.46
U. P.	10.45
Punjab	5.46
Burma	5.27
Bihar	11.09
C. P. & Berar	11.45
Assam	39.64
Orissa	17.28
Sind	15.19
Total Minor Administrations	9.84
Total Indian States	57.40
Total	213.57

All these Statements are taken from the proceedings of the Eleventh Annual General Meetings of the I. R. T. D. Association held on 3rd April 1939.

COMMENTS ON INTERIM REPORT OF THE TRANSPORT SUB-COMMITTEE

By

N. M. Chinoy.

CHAPTER I.

Page 1, last para.

In Table IX, reference is made to the "losses suffered by the railways due to motor competition". It should be explained how these figures have been arrived at. A Railway's losses may be due to various factors, not excluding its own inefficiency or lack of facilities. To ascribe any losses to "motor competition" might not only be inaccurate, but positively mischievous, as tending to give rise to an impression that motor transport is an unhealthy element in the national system of communications.

I, therefore, submit that the losses suffered by the Railways be merely stated as such, and that if any explanation of the losses is attempted, it should be based on a careful and systematic survey of all the various contributory factors.

Page 2, para 1.

Apparently, every heavy motor vehicle is supposed to be competing with Railways, which of course is not the case.

CHAPTER III.

Page 10, para. 1.

I do not agree with the State distributing the traffic between Road and Railway. Competition is the essence of efficiency and progress. The user should have unfettered right to choose whichever mode of transport suits him best.

CHAPTER V.

Page 13, paras. 1 & 2.

I do not agree that transport services, or industries which produce the equipment for transport services, should be State enterprises.

If the idea is that transport services and the key industries, being of vital importance to the industrial activity of the nation, should be made to serve national interests rather than allowed to be exploited for the private gain of a few, this object could equally well be secured by instituting the necessary degree of **control** by the State. Control, however, need not mean ownership and management. That would be confusing the issues. Control is necessary for safeguarding national interests; whereas ownership and management are matters which affect the successful and efficient operation of the industry. In all private enterprises, it is the keen incentive for commercial success and private gain which provides the driving force behind progress and efficiency. In state-managed enterprises, this incentive is lacking, with the result that red tape and departmental routine creep in, driving out efficiency.

I may point out that even such vital industries as the manufacture of munitions, aeroplanes, etc. are privately owned and managed in progressive western countries like the U.S.A.

This question, viz. of the nationalisation of industries, falls outside the scope of the Transport Sub-Committee. All that we need do is point out which key industries are needed in India, which of these it is practicable to establish in India, and what degree of State control is necessary over such industries for their utilisation in the best interests of the nation. The question of their ownership and financing may be left to other sub-committees like the Finance Sub-Committee, or to the National Planning Committee itself.

General

The vexed question of the Taxation of Road Transport does not appear to have been dealt with in this Report. Since taxation has an important bearing on the future of the Road Transport industry, reference is necessary to the principles which should govern such taxation.

NOTE BY DR. D. R. GADGIL

Scope :—The Committee's terms of reference cover all transport agencies. The Committee will pay special attention to Railways, road vehicles, inland water transport, coastal and overseas shipping and transport by air.

Preliminary Study and Investigation :—Preliminary studies by the staff of the N. P. C. and investigations by special investigators should be directed towards obtaining factual data on the following points :

(i) The Transport Regions into which India could be most suitably divided and the peculiarities of each region.

(ii) A study of the main entrepot and distributive centres, the transport agencies that serve them together with the level of rates and fares.

(iii) The lines of movements of important commodities :

(a) Indian agricultural produce. Food and Raw materials.

(b) Products of the main Indian manufacturing and mining industries.

(c) Imported goods,

and the influence of the present rates and fares structure in shaping these lines of movement.

Questionnaire :—To be addressed to main bodies of Producers, Traders and Owners and Managers of Transport Agencies. Also to certain Government Departments and specialist students.

Questions may be framed to elicit information on the following topics.

1. Present Service afforded by each Transport Agency.

(i) Its adequacy in terms of its carrying capacity related to the volume of traffic offered.

(ii) Its character, special reference to defects and how they could be remedied.

2. The extent to which the existing equipment of each transport agency could give additional service either (i) without any additional cost or (ii) with expenditure only in respect of rolling stock or (iii) with moderate expenditure for alterations or strengthening of the way of track.

3. The extent to which and the manner in which by either a more economical working or a better coordination of the various agencies the present equipment could be made to yield additional service.

4. Present Rates and Fares.

(A) Comments on (i) their level (ii) their structure.

(B) Complaints about discriminatory rates (i) as between users and (ii) as between localities.

(C) Special Problems such as those of risk rates, terminal charges etc.

5. The possibilities of lowering rates with extension of services in the future.

6. The Regulatory systems affecting each transport agency at present.

(i) Its adequacy. (ii) Its propriety.

(a) by itself. (b) vis-a-vis the systems governing other agencies.

7. The extent to which active competition exists between transport agencies at present and the manner in which this is evidenced.

8. The extent to which coordination among any two or more agencies is brought about today.

(i) by private arrangement. (ii) by agreement between representative bodies. (iii) by obtaining control, financial or otherwise, by one agency or others. (iv) by regulation or legislation of an external authority.

9. The general principles on which the regulating systems should be built in the future.

10. Future arrangements for coordinating various transport agencies. In respect of (i) Building Programmes (ii) Distribution of Traffic (iii) Rates and Fares.

11. The policies that govern at present the extension of way and plant of the various transport agencies. Special reference to railway policy—strengthening of way, working of branch lines, adoption of quicker and cheaper types of vehicles etc.

Roads : Road Fund administration and the road policy of provincial governments and local authorities.

12. The most suitable manner in which an extension of the total transport service could be brought about in each individual region. The costs of such an extension estimated in two or three stages.

13. The ways and means of future transport agency Finance.

14. The various taxes to which the transport agencies are at present liable; the total proceeds of such taxation, the taxing authorities and the uses to which the tax proceeds are put.

15. Miscellaneous.

(i) Problems of conservation and safeguarding, such as those of river dredging.

(ii) Notes on special topics like the organization and charges of Port Trusts.

16. While most of the above questions could be treated in respect of each transport region some problems like that of the future of air transport and some of those connected with coastal shipping would have to be dealt with separately.

COMMENTS ON MR. GADGIL'S NOTE

By

Dr. F. P. Antia.

I agree that the Committee's terms of reference should cover all transport agencies.

Further I suggest that the Committee accept the following principle :

Assuming all transport agencies are both owned and worked by one supreme transport authority, say, a statutory body, let the Committee ascertain what would be the most efficient instrument of transport for each part of the country. The efficiency contemplated here is with reference to the suitability of the instrument, having regard to the topography of the country, the natural resources available and the traffic that is offering. It also includes the conception of the utmost economy in cost in making the transport service available.

The acceptance of this principle does not imply that the Committee are deciding in favour of a full-blooded policy of national ownership of all transport instruments. It will be recognised, however, that if each route or area is to be given the most economic, efficient and suitable means of transport, no consideration of competing vested interests can be given quarter to in the scheme. In other words the Committee would proceed to consider the problem on the basis that it had an entirely free field.

This does not mean that the Committee will not take into account the already existing transport agencies within the region. If such existing transport agencies are found wanting in efficiency and in economy judged from the standards laid down then it will be relevant for the Committee to examine what justification there is for allowing the present transport agency to continue as against scrapping it altogether and substituting it by a new one. For example, a branch railway in a particular area may not come up to the standard of efficiency and economy as against road transport. However, the Committee would have to take into account the fact that the rail road, the rolling stock and the station equipment is already available, whereas additional capital resources would have to be found to build a suitable road and equip it with vehicles.

Nor does this acceptance of this principle, rule out the possibility of several instruments of transport operating on the same route or in the same region one properly co-ordinated with another. All that is desired to lay down is that each route or region should have available for itself the most efficient and economical transport agency or agencies irrespective of existing vested interests. Any wastage which at present obtains by way of unsuitable or uneconomical transport agencies operating would be eliminated.

I shall refer to an item of topical interest in this connection. Take for example the proposed Sind-Bombay Railway. There are alternative proposals for a road connection. The matter has to be very impartially examined from the point of view of the whole community and not from that of the Railway interests or road interests. If after examining the available data it is found that having regard to the large wheat and cotton traffic that will be offering, railway service is the most suitable proposition, it should unhesitatingly be adopted. At the same time it may be found that several railway branch lines all over the country no longer fulfill their functions because of the availability of a more efficient agency in road transport. A scheme would be worked out to discontinue those branch railway lines and utilise the capital equipment thus released for construction of the new line in the region or on the route while it would provide the most suitable instrument of transport.

Similar view point would have to be adopted with reference to inland water ways, coastal shipping, air services, etc.

I suggest that with reference to each trade route or region, attempts should be made to collect material along these lines enabling us to judge how far the present means conform to our standard and what changes should be effected in them to conform to our standard.

THE PLANNING OF TRANSPORT

By

Dr. F. P. Antia

July 1 should have been a red letter day for all concerned with various forms of transport in this country, for on that day the Motor Vehicles Act came into force. Some of the interests will no doubt remain in a state of trepidation until it becomes clear how the multiplicity of new authorities set up under the Act are going to interpret the onerous duties imposed on them. Although the Act introduces far-reaching changes in the law affecting commercial and private road transport, operating permits are subject to a number of guiding principles on the right application of which depends the future of road transport anywhere in the country. There are no strict and definite rules laid down in the Act to make the issue or non-issue of permits automatic. Rather does the ultimate decision depend in each individual case on the good sense of those constituting the Provincial and Regional Transport Authorities, subject only to several considerations of a general character, definitely formulated in the Act. It is as well to make clear what these considerations are. First, come the advantages offered to the public, trade and industry by the further development of motor transport; second, the need for co-ordinating road and rail transport; third, the desirability of preventing the deterioration of the existing road system, and lastly, the prevention of uneconomic competition among motor vehicles. All these are vitally important factors urged upon the proper authorities for many years past, and it is something of an achievement of find these incorporated at last in the form of a statute. It is clear, however, that the formulation of principles, unexceptional in themselves, must have their true and impartial observation and interpretation for the public to be the gainers in the end. The responsibility of the respective authorities under the Act is consequently immensely great. Should these principles be applied without fear, or favour, as no doubt they will be, the balance of advantages flowing from the Act is likely to favour public interests in all spheres of national activity. It cannot be overlooked, however, that where a set of principles instead of a definite code of rules is laid down to guide an authority in the conduct of public business there is much room left for friction and discontent, for ultimately it is the attitude of the individual or individuals constituting the authority that counts in such cases.

Hence, the proper working of the new Act must depend very largely on the personnel concerned with decisions. It is to be hoped that all cases will be dealt with purely on merit, in which the paramount interests of the country as a whole will always prevail.

With the Act on the Statute Book it is too late to suggest alternative methods. We have to wait and see how far the results will justify the methods laid down. It is noteworthy, however, that in spite of the many years of cogitation and digestion since the problem of competition in transport had become sufficiently acute, and the solution adumbrated in the Mitchell and Kirkness report to Government on the state of affairs then prevailing, it should have been found impossible to frame a code of rules to guide not only present relations between existing transport undertakings but future development as well. Surely there was enough data available here and in most other countries to take account of more than the competition between road and rail. The remarkable development of the internal combustion engine during the present century has revolutionised not only road transport, but the whole balance of transport has been altered. Because the swift development of road transport is somehow more visual and concrete to most of us, it does not follow that we ought to ignore the no less remarkable advance of air communication. There is further the effect on water transport and on the railways as well. We are so much impressed by the failure of the railways to overcome road competition that we overlook completely the vast role to be played in the scheme of internal communications, especially in this country, by water transport, by far the cheapest method of conveying non-perishable commodities from place to place. No less do we fail to take due note of the potentialities of air communication, which already takes its share even in countries of narrow limits and short distances. Both these forms of transport take away from the railways and are bound to enter into competition with the railways more and more in a country of vast distances and often very difficult terrain. Admittedly water transport is slow, but due allowance must be made for the increased speeds made possible by the utilisation of the modern internal combustion engine in marine and river traffic. Obviously we have here four different forms of communication, from slow to very fast through graduations of speed, each able to play its part in a co-ordinated sys-

tem of national transport, each adequate for particular needs, and each capable of rendering due service in economic development. Let us take each in turn.

Since our investments in the railways are apt to blind us to any possible superior advantage provided by a competitive form of transport, we shall devote a paragraph to the railways first. There is no desire to depreciate the admirable service our railway system is rendering to the community; on the contrary, we fully admit the financial and economic asset of the railways. Further, we are fully conscious of the grievous losses sustained by the railways on an ascending scale for a number of years directly attributable to road transport competition. But we are not prepared to attribute such losses wholly to road transport. Frankness demands that stress be laid on the apparent failure of the railway authorities to appreciate the altered situation, to face the facts as they became clear from 1920 onwards. They have shown a lamentable lack of imagination which is as any of the other causes often unduly stressed. Perhaps the best commentary we can make is to quote a few lines from the report on the British Railways of the Royal Commission appointed some years ago by the British Government. Although its comment or stricture had direct reference to the British railways at that time, it might with equal force have been written about our railways here. Do not let us forget that the report had relevance to the same problem of road competition; and this is the pertinent paragraph : ".... in the days of their monopoly the railways had in some ways insufficiently studied the needs of their public, and that their policy had become unduly conservative.... The passenger services generally were unnecessarily slow and often inconveniently timed. In too many cases the general attitude seems to have been that as a passenger had to use a particular line he must travel at times and at a speed convenient to the railway. The truth of the doctrine that facilities create traffic appears to have been forgotten. In recent years there has certainly been some improvement, no doubt mainly due to road competition, but in our opinion much remains to be done". How well and true does this extract express the position here! The new act is mainly designed to safeguard the interests of the railways, although there is no assurance that the Railway Board is actively engaged on placing the railways themselves in a competitive position

by modernisation and reorganisation. The latter are no less required to justify restrictions on competitive forms.

As for road transport, we are witnessing a perfectly natural development due in the first instance to the internal combustion engine, and, secondly, owing to the great economic service, apart from convenience, the road vehicle renders to trade and industry. At no time and under no conditions can anything replace the motor vehicle for transportation or delivery of goods over short distances. Even the door to door delivery now undertaken by the railways is made possible only by the motor vehicle. However the chaotic conditions prevailing in road transport, the unnecessary multiplication of vehicles with consequent congestion, the often uneconomic terms of utilisation, and the quite unnecessary extensions are due principally to the absence of proper control and regulation, absence of co-ordination with other forms of transport and within itself. The new Act renders a public service in so far as it regulates the operation of road transport. The criterion to be applied in the issue of permits for road vehicles should be actual demand and necessity vis-a-vis existing services and how far any new service will contribute towards the well-being of the community in any particular district. Here again we are faced with the discretion to be exercised by the relevant authority. Since the railways themselves are now increasingly interested in road transport, there is a danger that the railways may get the preference where they may apply for permits in competition with other interests. Such a state of affairs ought not to arise. The way out is to nationalise all forms of transport, a consideration we must discuss separately. All other considerations apart, the essential thing now is that in the freedom of interpretation permitted by the Act no restrictions of a vexatious character should be placed upon the legitimate expansion of road services. There are far too many areas still lacking adequate transport facilities. Rail and road transport were taken first only because they have been so prominent in all discussions up till now. There remain water and air transport to be given their due place in the scheme of things. Although the country is widely cut by the flow of huge rivers and canals, precious little consideration is being given to the advantages that may accrue to a large number of out-of-the-way agricultural settlements from a properly organised system of water communications, capable of supplementing rail

and road. We naturally make use of our sea coast already for the carrying of goods and passengers, but even in this, radical improvements are possible in so far as speed, comfort, and convenience are concerned. Equally we ought to consider the possibility of a network, of inland waterways of undoubted benefit to the agricultural population, as well as for industrial purposes. In the same way air services and their extension in the future ought to be planned ahead to fall into a carefully considered pattern of national service side by side with the other forms of transport. For passenger and mail traffic the future lies with the fast air services and we cannot very well ignore this factor in any consideration of transport developments. So far there are only seven regular air services in the whole of India, far too few by any standard of comparison. The main centres of trade and population at least ought to have been connected up in this respect long ago. The question arises whether our vast interests in the railway system do not stand in the way as they did all along in the case of road transport. A natural development ought to be for the railways themselves to operate air lines as a national service.

The new Road Transport Act may, if sensibly and impartially interpreted, bring better order into the relation between road and rail, and is to be welcomed on this account. But it does not go beyond the mere approach to the problem of national transport. We claim that the subject is too vast to be dealt with piecemeal. If we are really bent on finding the correct solution, the only method is to embody in the form of a comprehensive statute a real scheme of unified transport, based on all the four systems discussed here. A definite relationship ought to be established between water, rail, road and air transport, each to fit in and carry out the task best suited to it. We must emphasise the impossibility of real co-ordination without prior unification. Short of completely unified ownership, or mainly so, we shall continue to witness the spectacle of injurious competition; the railway mind opposing the road mind; water services pursuing their own chequered career; conflict and friction not only between various forms of transport but between companies operating each. Such a state of affairs has arisen already in some sections and is bound to become intensified as the struggle for profits and preference reaches its climax. Wastage of effort and resources is the outcome, where conservation should be the

Cotton was placed in the second class so that the rate on it was 0.50 pie mile per maund. It may however be noted that the G.I.P. Railway, the broad gauge section of the B.B. & C.I. Railway and the Madras Railway did not accept this classification till years later; it may also be noted here that whereas all the other railways had a maximum of 0.50 pie per maund per mile, the G.I.P. Rly. was allowed to maintain a higher rate, viz., 0.80 pie per mile per maund on cotton. We shall revert to this later.

The Government classification of 1891 continued till War. The Government was out to supply itself with ads and with that object passed Act XIII of 1917. Under this Act, the Government collected a surcharge which amounted to 1 pie per maund per mile on coal, coke and firewood, and 2 pies per maund on all other articles. Thus, the surcharge on cotton amounted to 2 pies per maund.

In their search for still more revenue, the Government proposed to increase the surcharge, but this proposal was abandoned, and instead of it, a primage charge of 2 as. 6 ps. per rupee of freight was levied under the Indian Finance Act VI of 1921, on all goods excluding grains and pulses, firewood and fodder, but including coaching traffic other than passengers. There was however a free zone of 20 miles allowed in order to avoid competition with country carts.

The Company-managed railways protested against these surcharges on the ground that they disregarded the fundamental principles of rate-making. It was pointed out that in many cases, the surcharges had raised freights to such a level that they had to be removed in order to prevent the total extermination of the traffic itself. It is interesting to remark here that the railways themselves declared that in their own interest, they were increasing their goods' rates side by side, and that these increases had raised the rates to the limit of what the traffic could bear, in many cases even without the imposition of the surcharge. The result was the question was taken up by the Indian Railway Conference Association; the war time measures of surcharge and primage were repealed and a new classification with new maxima and minima were put up. The original 5 classes were replaced by 10 classes, and the maximum freight for each of the 10 classes was prescribed. The following Table shows the increase in class rates :—

* Rates in pies per maund per mile.

Before revision			After revision			Percentage increase in Maxima
Class	Maxima	Minima	Class	Maxima	Minima	
1st	.333	.100	1st	.38	.100	16 p.c. over existing 1st
2nd	.500		2nd	.42		25 p.c. „
3rd	.666		3rd	.58		15 p.c. „ „ 2nd
4th	.833	.166	4th	.62		25 p.c. „
5th	1,000		5th	.77	.166	15 p.c. „ „ 3rd
X	1.500		6th	.83		25 p.c. „
			7th	.96		15 p.c. „ „ 4th
			8th	1.04		25 p.c. „
			9th	1.25		25 p.c. „ „ 5th
			10th	1.87		25 p.c. „ „ X

In general, it may be pointed out that the freight on commodities of very low value was increased by 15 per cent and that on others by 25 per cent.

We need not enter here into the details of the revised classification, but it may be sufficient for our purpose to note that "cotton full-pressed" was promoted from class 2 to class 4 so that the maxima rate increased from 0.50 pie to 0.62 pie per maund per mile. Half pressed cotton similarly was put up from class 3 to class 6 and the freight raised from 0.666 pie to 0.83 pie per maund per mile. The G. I. P. Railway which already classed cotton very high and was charging 0.80 pie per mile per maund did not like to be left out of this increase, and so its rate went up to 1 pie per mile per maund.

Present Position of Railway Rates on Cotton.

This brings us to the present position. Broadly speaking, it may be pointed out that there has been no further revision of railway rates on cotton, except possibly in special cases where special rates are quoted for special purposes. Where there are no special rates, the freight charged is the **maximum** freight which can be charged under the previous classification as per Table II. (i.e. 62

*K.C. Srinivasan "The Law and Theory of Railway Freights" p. 164.

pie per mile per maund except on the G. I. P. Railway where the rate is 1 pie per mile per maund) plus a terminal charge which varies with the different railways. **It follows that cotton freights have been stabilised at a level which was considered justified in the boom period which followed the War.** There is no concession for cotton in the form of a telescopic rate or a rate which is composed of a number of rates, the highest rates being charged for the first unit haul, a little lower rate for the next haul, a little further lower rate for the next and so on, as is done in England. Here is an example of a telescopic rate : "for the first and up to 300 miles .380 pie per maund per mile; for extra distances above 300 miles but not exceeding 700 miles .130 pie per maund per mile; for extra distances above 700 miles to be added to the charge for 700 miles. .100 pie per maund per mile." But cotton seems to have been selected as a commodity which can bear a heavy incidence of freight charges and has been denied this concession.

In the history as given above, we have not referred to the "special" or "station to station" rates which are lower than the maximum prescribed and referred to above; but these special rates have been different on all railways and have been fixed in their own interest by railways concerned in order to meet the competition of foreign railways or alternative modes of transport or to specially encourage traffic to particular points. Even here, there have been substantial increases in railway freights over the pre-war level. While station to station freight may work out cheaper than the maximum rates, it may be remarked that a large proportion of the volume of cotton traffic has to bear the maximum charges referred to above.

The attached Table illustrates the increase in railway rates on raw cotton. The rates ruling in 1917 in the Table were practically the rates ruling before the war and before the increase in railway rates was started as per Act XIII of 1917. The "present rates" in the following Table are the rates ruling in 1939, and show the enormous increase in railway freight. It will be seen that while the railway rates were stabilized at the high levels reached during the post-war boom, they were not reduced subsequently although the prices of commodities fell even under cost of production, as in the case of cotton.

The freight policy of Indian railways is based on the theory of what the traffic can bear, and so long as cotton continues to move on a railway, no regard is paid as to whether the cultivator is left with anything even to recover his cost of production. Complete illustration of this was afforded some two or three years back when cotton seed began to be used as fuel in the interior of C. P. When this complete justification for a reduction in railway freight was realised, the railways started reducing the railway freight on cotton seed. Otherwise, the railway freight is reduced only when there is competition either from motor lorries or from the sea route or river routes. Thus, the railway freight from Broach to Bombay is As. 6|5 during the fair season when countrycraft can ply in competition, and As. 11|5 in the monsoon when no countrycraft can come. Since the outbreak of war in September 1939, the tendency has again been for the railway freight to be increased, especially where it is felt that the cost of a competing route will also be increased, e.g. owing to a rise in the price of petrol or of steamer freight on a competing route like that from Karachi to Bombay.

It will thus be seen that the railway policy of charging the maximum rates the traffic can bear and of reducing them from that level only when there is a competing alternative route is hardly in the best interest of the agricultural producer of India, and in a planned economy of India, the railway freight should be so arranged as to give the maximum return to the grower consistent with the railways recouping a fair charge for their services.

The principle of what the traffic can bear should not be applied in the case of raw cotton or in the case of any commodities produced in India as the railways must realise that they have to serve the national interests of India. If in accepting this new principle of serving the national interests of India, the railways find a depletion of their revenues, they can very well re-imburse themselves by increasing the rates they charge on manufactured articles imported from abroad.

The present tendency of special low rates of freight to the ports or from the ports would also have to be revised in a controlled national economy. The principle of granting special rates to Indian industrial centres like

Bombay, Ahmedabad, Cawnpore, Nagpur etc. should be extended so as to encourage Indian industries in India for the consumption of Indian cotton and other produce of Indian agriculture which can be utilised in India.

The suggestions made on the above lines will no doubt be properly considered by the Transport Sub-Committee and hence, I content myself with merely a brief outline of the same.

Rates to Bombay in Rupees Per Maund

G. I. P. Rly.

Distance	Forwarding Station	Rates in 1917 Rs. a. p.	Present Rates Rs. a. p.	Increase Percentage
239	Dhulia	0 11 6	0 14 2	21.7 **
232	Panchera	0 15 1	1 3 10	31.5 **
261	Jalgaon	0 14 7	1 2 1	24.0 **
363	Akola	1 6 2	1 10 4	18.0 **
419	Amraoti	1 4 7	1 15 0	50.7 **
341	Khamgaon	1 4 11	1 8 6	17.1 **
520	Nagpur	0 14 1	1 11 5	94.6
493	Hinganghat	1 0 2	2 0 1	98.4
	B. B. & C. I. Rly.			
147	Navsari	0 3 11	0 7 2	82.9 *
			0 8 7	119.14
165	Surat	0 4 6	0 5 1	12.9 *
			0 9 6	111.1
196	Ankleshwar	0 4 9	0 7 7	59.5 *
			0 11 2	135.0
202	Broach	0 4 9	0 6 5	35.0 *
			0 11 5	138.2
218	Palej	0 6 2	0 8 0	29.7 *
			0 12 3	98.65
227	Miyagaon	0 6 7	0 10 3	55.6 *
			0 12 9	93.73
334	Itola	0 6 11	0 10 8	54.2 *
			0 13 1	89.2

* These rates apply during the fair season only and were introduced to meet native-craft competition.

** These special rates were introduced to meet competition by the rail-cum-sea route by Jalgaon and Surat.

N.B. From December 15, 1939, these rates have been again increased by about 10 per cent.

Rates to Nagpur in Rupees per Maund

Distance	Forwarding Stations	Rates in 1914 Rs. a. p.	Present Rates Rs. a. p.	Insurance %	
49	Wardha	0 2 9	0 4 10	76.12	
80	Dhamangaon	0 4 9	0 7 2	50.7	
158	Akola	0 8 2	0 13 8	67.7	
467	Navsari	1 1 5	2 5 0	111.0	
(904*) 580	Gadag (vla Ballarsha)	2 2 4	3 1 1	121.74	*Old route via Hotgi and Manmad
596	Asarwa	1 4 2	2 11 8	115.0	
(1261*) 915	Tiruppur (via Ballarsha)	1 15 11	3 9 1	153.3	*Old route via Jalarpet and Raichur
(946*) 616	Hubli (vla Ballarsha)	1 9 7	3 2 11	209.4	*Old route via Hotgi and Manmad

OUTLINE OF DRAFT REPORT ON RAILWAY TRANSPORT

By

N. Sanyal.

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General Survey of the present position re :

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3. Railway Finance—Brief history and present position.
4. Control & Administration.
5. Traffic Conditions.
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Section II.

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Section III.

Ways & Means for achieving the objectives under Planned Economy.

Section I

General Survey of the present position

1. Introductory and brief Outline of the Development

The Railways of India have had a chequered career mainly conditioned by the problems of financing, ownership and control. The policy of railway development in India has been largely dependent upon such considerations and during different periods experiments have been made with a view to secure the expansion of railway net-work either with the help of private companies with or without State guarantee or through State construction directly.

Between 1850 and 1868 the initiative came from private companies, but the real financial responsibility was undertaken by the State in the form of guarantees varying from 4½ per cent to 5 per cent. After a brief period of an attempt to secure railway construction without a guarantee between 1862 and 1867, a programme of direct State construction and administration was undertaken in 1869 and this experiment went on till the end of 1879. In 1880 a Royal Commission on famines urged the rapid extension of the railway system and Government had to secure the cooperation of private companies once again, but with less onerous terms to the State. Between 1882 and 1902 company management and construction was revived and certain branch line terms were introduced in order to encourage investments of local capital. After a critical examination of the administration of Indian Railways by Sir Thomas Robertson in 1902, an attempt was made to provide greater encouragement to private companies, but public opinion was strongly in favour of State management. The Railway Board was constituted in 1905 and a policy of developing both State and company managed lines was followed till 1921, when the Acworth Committee discussed at great length the comparative merits and demerits of the two systems, as operated in India and gave their verdict in favour of State management. In 1924-25 the Government of India finally made up their mind to stand by State management and ownership and definitely

announced their intention of terminating the contracts of old companies as and when they fell due*. About the same time it was also decided not to encourage further the financing of branch lines by private companies.

As a consequence of various experiments that had to be undertaken in the development of railways in this country a diversity of condition prevails to-day in regard to the ownership, control and management of different lines. The following table gives a summary of the position as it existed at the end of the financial year 1938-39.

Summary of Mileage, Gross Earnings and Working Expenses of Railways, classified according to owner-ship and working in 1938-39.

Table I

in lakh rupees

Classification	Route mileage	Total Captial outlay or at Charge	Gross Earnings	Working Expense
1. State lines worked by State	15,630	463,93	56,01	38,59
2. State lines worked by Companies and Indian States	14,096	290,15	38,36	25,33
3. Branch line Companies' Railways under various terms	1,544	11,35	1,11	63
4. Subsidised Companies' lines	2,441	21,90	3,53	1,90
5. Indian State lines worked by Indian States	5,898	45,68	6,17	3,55

Of the Principal Railway systems, seven are still managed by Companies whose present contracts are due to expire on the dates mentioned against each:—

(i)	Assam Bengal Railway	31-12-41
(ii)	Bombay Baroda & Central India Rly. ..	21-12-41
(iii)	Bengal & North-Western Railway ..	31-12-42
(iv)	Rohilkund & Kumaon Railway ..	31-12-42
(v)	Madras & Southern Marhatta Railway ..	31-12-45
(vi)	South Indian Railway	31-12-45
(vii)	Bengal Nagpur Railway	31-12-50

In lakh rupees

Classification	Route mileage	Total Capital outlay or at charge	Gross Earnings	Working Expense.
6. Indian State lines by main lines	1,183	9,73	1,51	85,5
7. Companies' lines guaranteed by Indian States	39	17	1	9
8. Unassisted companies and District Board lines, etc.	212	1,21	13	9,4
9. Lines in foreign territory	74	2,44	30	1,77
10. Miscellaneous lines and adjustments	19	3,25	6	3,5
Total	41,134	8,47,82	1,07,15	71,18

Source : Railway Administration Report Vol. II, 1938-39 Table VI.

2. **Mileage, gauge etc.**

The following tables give the mileage of Indian Railways under different gauges as also the comparative railway mileage in India and certain progressive countries in proportion to the area and population of each.

Table II

Railway route mileage open to traffic on the 31st March.

Year	Mileage		
	Broad gauge	Metre and Narrow gauges	Total
1921-22			37,266
1927-28			39,712
1936-37			43,128*
1937-38	21,198	19,879	41,076
1938-39	21,165	19,969	41,133

* Figures upto 1936-37 include Burma Railways which were separated from 1st April 1937. Source :—Table VII, Railway Administration Report 1938-39 Vol. II,

Table III

Total Railway mileage, miles of line per 100 sq. miles, and inhabitants per line of one mile in different countries;*

Country	Total Rly. mileage.	Miles of line per 100 sq. miles.	Inhabitants per mile of line
U.S.A.	238,829	6.9	573
U.K.	20,080	22.5	2,233
Belgium	6,470	54.9	1,250
France	26,427	12.4	1,585
Italy	14,220	11.8	3,023
Germany (1933)	42,299	23.2	1,565
India	43,128	2.3	8,181

* Figures based on the figures given in Statesman's Year Book.

It will be seen from the above tables how poorly India is placed in respect to the Railway net work and how slow has been the rate at which new lines have been added particularly during the last decade. It is noticed as a matter of fact that during the last three or four years the policy of actually closing down some small sections and branch lines has been undertaken apparently with the object of relieving the railways of unremunerative sections. 109 miles of new lines of which 99 miles are located within Indian States and constructed at their cost were opened during the year 1938-39. There was on the other hand a decrease of 51 miles due to the closing of a certain small branch line and realignments and the net increase in mileage thus was 58 only.

It will further be noticed that a serious handicap in the operating of Indian Railways is created through the multiplicity of gauges in as much as there are no less than four different gauges prevalent, namely, the Broad Gauge of 5'—6", the Metre Gauge of 3'—3⅜" and Narrow Gauges of 2'—6", and 2'—0". The respective figures of route mileage opened on 31st March 1939 of all Indian Railways according to gauges had been as follows :

5'—6"	21,165
3'—3.3|8"	15,862
2'—6" and 2'—0"	4,107
Total	41,134

3. Railway Finance

The financing of Indian Railways has been either by the State direct or by companies under substantial guarantee from the State. The capital at charge in the case of State owned railways and the capital outlay in the case of other than State owned railways aggregated to about Rs. 848 crores in 1938-39, out of which the State owned lines accounted for a capital at charge of about Rs. 760 crores. The capital at charge on State owned railways has increased by nearly Rs. 250 crores since the separation of Railway Finance from General Finances in 1924-25 and in reviewing the capital expenditure the Railway Retrenchment Committee of 1931 noted that since the separation the expenditure had been on a rather lavish scale. The Indian Railway Enquiry Committee of 1937 (Wedgewood Committee) also drew attention to the same and observed :

" In the six years before the depression the gross traffic receipts stood at approximately Rs. 100 crores, and in 1935-36 they were about 10 percent below that figure. In the meantime the capital at charge had increased substantially and particularly so during the period from 1926-1930. The total advanced from Rs. 635 crores in 1924-25 to Rs. 789 crores in 1935-36, and the interest charges from Rs. 23,90 lakhs in 1924-25 to Rs. 31,39 lakhs in 1935-36." (See Report Para 11).

The role of the State in the development of Indian Railways has thus been direct and substantial and it may be generally stated that the Railways of India form one of the biggest national assets of the country financed and owned by the public and in approaching the problems connected with the Indian Railway Transport this special characteristic can hardly be overlooked.

Closely connected with the question of financing of the railways lies the question of financial results. It may be generally stated that up to 1901 the railways in India entailed a regular loss upon the General Revenues and the

total losses up to that time amounted to nearly Rs. 76 crores. From 1901 to 1930-31 there had been gains to the State from out of Railway Revenues excepting the years 1908-09 and 1921-22. The total amount of balance of gains over losses from 1901 to 1930—1931 amounted to about Rs. 143 crores. From 1931-32 to 1936-37 the railways failed to contribute anything towards General Revenues and during 1937-38 and 1938-39 they could only partially pay the same. At the end of 1938-39 the unliquidated liabilities of railways amounted to about Rs. 65.66 crores of which Rs. 30.29 crores represented the net amount of loan taken from the Depreciation Fund and the balance represented the contributions to General Revenues which had remained unpaid. The Railway Enquiry Committee of 1937 which went into this question carefully (para 11 to 13 of the Report) however found that judged by the percentage return on capital the Railways of India come out well in comparison with the Railways of the United States and Great Britain in as much as the Indian Railways had maintained their position at a higher level during the period of depression and had nearly returned to the 1929 level of prosperity by 1936.

Railway Finance in India has been separated from General Finances of the Government of India since 1925. This question had been under discussion from time to time since 1884 and ultimately the Acworth Committee strongly advocated the separation. In September 1924 the final scheme for separation was discussed in the Legislature and it was proposed (a) to abolish the system of annual programme of Revenue Expenditure voted for the year, (b) to establish a scientific Depreciation Fund, (c) to build up a Railway Reserve Fund with a view to equalise dividend, to provide for arrears for maintenance and to write down and write off capital and (d) to separate Railway Finance to suit the needs of a commercial undertaking while ensuring fixed contribution to Government and proper control by the Legislature. The contribution to General Finance was to be fixed according to a convention that provided for the payment of 1 per cent on the capital at charge of commercial lines at the end of the penultimate financial year plus 1/5 of any surplus profits remaining after payment of this fixed return less the loss on Strategic lines. This separation of Railway Finance from General Finances indicated an important landmark in the history of Indian Railways and about the same time the decision to take over all lines under

the ownership and management of the State as and when opportunities were presented was taken.

The Government of India Act 1935 which contemplates the creation of a separate Federal Railway Authority, provides for the creation of a separate Railway Fund and the Authority will be required to contribute to General Revenues such portion of its surplus earnings on Revenue Account as may be decided upon by the Federal Government. The Federal Railway Authority will also undertake all the financial obligations of the Government of India hitherto incurred or that may be incurred in future on account of the Railways.

4. Problems of control and administration

The organisation of government control and management of the Railways has undergone various changes from time to time corresponding to the change in the policy and financing of the Railways. At first Government exercised their control over the operation of guaranteed Railway Companies through a Consulting Engineer. Thereafter in 1874 a State Railway Directorate was established and in 1880 the post of a Director General of Railways was created. In 1897 the Secretary to the Government of India for the Public Works Deptt. came to be entrusted with the control and administration of the Railways. But in 1905, following the recommendation of Sir Thomas Robertson, the Railway Board was constituted, which, after having passed through various stages, has taken the present form on the recommendation of the Acworth Committee. The Railway Board is again to be reconstituted under the proposed Railway Federal Authority as contemplated in the Government of India Act of 1935. The Board thereafter will be concerned only with the executive functions of the Railway Authority. The questions of internal administration and management of the different systems of Railways with their divergent conditions of working have also engaged considerable attention from time to time and generally speaking the big Railways have now passed over from the Departmental to the Divisional System of management.

5. Traffic conditions

An important feature of Indian Railways is the close interdependence of Railway traffic and earnings with the

conditions of trade and agriculture which have often been found to be difficult to forecast. Broadly speaking it may be stated that the total gross earnings of Indian Railways steadily went on improving from 1914-15 when it was about Rs. 60 crores to 1924-25 when it was as high as Rs. 114.5 crores. The rate of increase during the four years 1921-22 to 1924-25 being the highest. 1925-26 and 1926-27 had a slight set back but earnings again improved in 1927-28 to Rs. 118 crores and the highest point was reached in 1928-29 when the earnings were as high as Rs. 119 crores. A period of depression then set in and a serious decline in the traffic earnings occurred during the following years. Until 1932-33 when the trough of the depression was reached when the traffic earnings went down to about Rs. 96 crores. Recovery began from 1933-34 to 1938-39; the total gross earnings of all lines amounted to a little more than Rs. 107 crores. The following table gives the traffic results of all Indian Railways during the years 1936-37 to 1938-39, excluding Burma Railways which passed out of the control of the Government of India from 1937-38.

Table IV.

Traffic Results of Working all Indian Railways (excluding Burma Railways)

	1936-37	1937-38	1938-39
1. Route mileage open	41,068	41,076	41,134
2. No. of passengers originating (in thousands)	489,606	521,285	530,623
3. No. of passengers miles (in millions)	17,785	18,847	18,742
4. Tons originating (in thousands)	82,406	87,289	88,361
5. No. of ton miles (in millions)	20,789	22,778	22,159
6. Average miles a passenger was carried	35.8	36.2	35.3

	1936-37	1937-38	1938-39
7. Average miles a ton of goods was carried	248.5	260.9	250.8
8. Total earnings from passengers (in lakhs of rupees)	29.37	31.08	30.73
9. Total earnings from goods (in lakhs of rupees)	67.33	68.66	68.57
10. Earnings from parcels, luggage, and miscellaneous (in lakhs of rupees)	8.00	7.83	7.85

Source : Railway Administration Reports Vol. I. 31 & 32 for 1937-38 & 1938-39.

Statement below gives the details of passenger earnings on all Class I Railways (excluding Burma Rlys.) for the last three years showing broadly the contribution made by different classes of passengers towards Railway Revenue and their progress over a short period.

Table V.

(In lakhs of rupees.)

	1936-37	1937-38	1938-39
First Class	77	78	76
Second Class	137	139	135
Intermediate Class	113	121	122
Third Class	24,45	25,94	25,89
Total	27,72	29,32	29,22

The following statement gives the details of the various commodities which have contributed to the goods earnings of all Class I Railways (excluding Burma Rlys.) which account for nearly 90 per cent of the goods traffic on all Indian Rlys.

Table VI

(In lakhs of rupees.)

	1936-37	1937-38	1938-39
Cotton raw	4,62	2,88	2,89
.. manufactured	2,46	2,60	2,59
Coal for public use	6,93	8,24	7,88
Coal for Foreign Rlys. etc.	2,58	2,98	2,86
Metallic ores	99	1,41	1,06
Rice	3,38	3,30	3,39
Wheat	2,46	2,67	2,40
Grams, Pulses, Grains etc.	3,38	3,47	3,31
Iron & Steel wrought	2,61	2,49	2,63
Kerosene oil	1,60	1,59	1,58
Jute	1,30	1,17	1,18
Oil Seeds	3,28	3,03	3,60
Sugar	2,27	2,11	2,16
Gur, Jaggery & Molasses	1,27	1,20	1,01
Total of all Goods Traffic	46,13	66,71	66,69

Source: Railway Administration Reports Vol. II Table 29.

The table given below shows the tonnage of and earnings from principal class of commodities carried by Class I Railways in the years 1937-38 to 1938-39.

Table VII

	1937-38		1938-39	
	Tons originatings (in millions)	Earnings (in lakhs)	Tons originatings (in millions)	Earnings (in lakhs)
1. Fuel including Coal, Oil and Fire wood	22.7	12,10	22.5	11,59
2. Heavy merchandise	22.2	24,33	23.1	24,12
3. Light merchandise	11.1	14,32	10.8	14,66
4. Other commodities	10.1	11,43	10.5	11,77
5. Military Traffic	0.39	40	0.32	31
6. Live Stock	0.17	54	0.17	55
7. Railway Materials	2.96	45	2.96	47
8. Materials & Stores on Revenue A/c.	13.31	2,9[illegible]	13.80	2,95
9. Total of all commodities	83.12	66,48	84.37	66,42

Source : Railway Administration Reports Vol. II Table 29.

The statement given below shows the principal commodities carried by Class I Rlys. and the earnings therefrom for the three years 1937-38 to 1938-39 indicating thereby the

lines to be followed in the preparation of any planned organisation for traffic handling in future years.

Table VIII

		1937-38		1938-39	
		Tonnage originating	Earnings	Tonnage originating.	Earnings
		(in millions)	(in lakhs)	(in millions)	(in lakhs)
1.	Coal & Coke for public	16.45	8,24	16.43	7,88
2.	Coal & Coke for foreign Rlys. etc. home line construction	4.43	2,98	4.28	2.86
3.	Fire wood etc.	1.83	49	1.83	50
4.	Rice in the husk	0.67	39	0.76	43
5.	Rice not in husk	2.50	2,91	2.75	2,96
6.	Gram & Pulse	1.61	2,36	1.58	2,29
7.	Wheat	1.86	2,67	1.76	2,40
8.	Jowar & Bajra	0.40	56	0.43	53
9.	Marble & Stone	2.70	99	3.30	91
10.	Salt	1.40	1,82	1.40	1,78
11.	Sugar—refined & unrefined	1.10	2,11	1.20	2,16
12.	Wood wrought	1.30	89	1.30	85
13.	Metallic ores	4.00	1,41	3.60	1,06
14.	Oil Seeds	2.40	3,04	2.70	3,60
15.	Cotton—raw pressed & unpressed	1.00	2,87	1.00	2,89
16.	Petrol—in bulk & tins	0.30	1,14	0.31	1,17
17.	Kerosene oil—in bulk & tins	0.77	1,58	0.80	1,58
18.	Cotton manufactured	0.71	2,61	0.71	2,59
19.	Fodder	0.90	64	1.30	87
20.	Fruits & Vegetables	4.10	1,34	3.10	1,27
21.	Gur, Jaggery & Molasses	0.70	1,08	0.60	88
22.	Jute raw	1.00	1,17	1.00	1,18
23.	Iron & Steel—Wrought	1.40	2,49	1.50	2,63
24.	Tobacco	0.30	84	0.30	88
25.	Provisions	1.10	2,87	1.30	3,06
26.	Manures	0.27	19	0.28	19

Compiled from Railway Administration Reports Vol, II Table 29,

6. Rates & Fares—Brief history and present position.

The Railways of India were first conceived of and laid down not so much with a view to making them commercially successful as with an idea of advancing the general economic and political conditions of the country. The rates and fares of Indian Railways consequently were originally determined more or less with the object of serving the general well being of the country and specially to encourage its trade with foreign countries. The rates structure had originally been built more or less on assumptions of traffic movements and total amount of gross revenue and there was hardly any commercial or scientific investigation on the basis of which the rates and fares were actually fixed in the 19th century. Previous to 1884 it may be generally stated that there was no general policy of rates followed by the different railway systems of India. It was only in 1887 that certain principles of rating were laid down by the government and the limitation of maxima and minima class rates was devised with a view on the one hand to prevent the levy of unreasonably high rates and on the other hand to stop uneconomic competition between one railway system and another. The Indian Railway Conference Association which was constituted by the beginning of the 20th century took up the question of tariff simplification and of a general classification of goods and it was as a result of the efforts of this Association that the first general classification of goods on Indian railways came to be adopted in July 1910. Certain adjustments and improvements in the classification and rating had been introduced from time to time. In April 1922 a classification into ten classes was introduced. A further revision was made thereafter and from 1|5|1936 the number of classes has been increased to 16. The maxima and minima rates for these being as shown below.

Pies per maund per mile

Class :	Maxima	Minima.
1	0.38	0.10
2	0.42	,,
2A	0.46	,,
2B	0.50	,,
2C	0.54	,,

Pies per maund per mile.

Class	Maxima	Minima
3	0.58	0.166
4	0.62	,,
4A	0.67	,,
4B	0.72	,,
5	0.77	,,
6	0.83	,,
6A	0.89	,,
7	0.96	,,
8	1.04	,,
9	1.25	,,
10.	1.87	,,

Within these maxima and minima the railways have full powers to vary charges and these powers are freely exercised in as much as 80 per cent of the revenue from goods traffic is obtained from rates below the authorised maxima. It may be mentioned however that no change in the classification of commodities may be made without the sanction of the Railway Board. (See : Wedgewood Committee Report Para 125.)

The rates charged on a commodity come within one or other of the following categories viz :

(a) Class rates i.e. maximum permissible;

(b) Schedule rates based on a scale generally telescopic as adopted by the Indian Railways Conference Association or by individual railways; and

(c) Station to Station rates which are reduced rates quoted with regard to special commercial considerations. Terminal charges are added to class or schedule rates as an additional charge determined by each railway administration for terminal service performed or accommodation afforded. Rates are also quoted either at the railway's risk or at the owners' risk as the case may be; the former being higher than the latter; seeking to reflect

the amount of risk undertaken by the railway administration in a particular case.

As regards passengers there are four classes of services on the Indian Railways, first, second, inter and third and the basis of charges generally followed are on a tapering scale according to distance travelled. The maxima and minima for different class of passengers ordinarily lie between the following limits :

Table X

Passenger Fares

(Pies per passenger per mile)

	Maxima	Minima
First	24	12
Second	15	6
Inter	$5\frac{1}{2}$	3
Third	$3\frac{1}{2}$	$1\frac{1}{2}$

As between different railway administrations a great deal of variation is noticed in the actual fare charged for different class of passengers even on different State managed railways under class one.

No other problem of Indian Railway administration has engaged so much public attention as those relating to rates and fares. Briefly speaking the following have been the grievances of the public with regard to the rates system on the Railways of India :—

(a) The rates have been framed more with a view to encourage export and import trade of the country than to provide facilities for internal movements and for the advancement of indigenous industries.

(b) The absence of comprehensive and scientific planning in the fixation of rates has resulted in numerous inequities and anomalies in the rates for different commodities in different parts of the country.

(c) There have been certain instances of undue preference and discrimination in favour of powerful

European importers or manufacturers, as also of unreasonableness of certain rates.

(d) The classification is too inelastic and needs further sub-division and supplementing.

(e) The difference between owner's risk and railway risk rates is disproportionate, and the conditions of carriage are often very hard for the users of the railway.

(f) The terminal charges hardly follow any clear principle and are often used for placing undue hardship transfer to other competitive transport services.

(g) In a few cases rates have been devised in order to block traffic and to prevent its flow through the natural and most economical course.

(h) The absence of telescopic through rates on a continuous mileage basis over several systems has often acted as a check to free internal movement of traffic.

(i) Adjustments and exceptional rates to suit conditions of competition or special requirements of traffic are not carefully fixed nor are they decided upon with expedition and a long view of things.

(j) The conditions of packing are often constant sources of trouble, particularly for indigenous manufacturers.

(k) The tariff needs simplification and the machinery for quotations needs overhauling so that firm rates may be obtained by merchants quickly, if possible, only through a reference to station Rates Registers.

During recent years the approach to the problems of rates and fares in India has undergone considerable change due to the recognition of the essentially commercial nature of the railway industry. The Acworth Committee drew pointed attention to this aspect of Indian Railway rate making, and since then considerable modification has been made in various individual rates on the basis of this policy. (See—Sanyal on Communications & Transport—Mukherji —Economic Problems of Modern India—Ch. XIII.)

7. Rail Road Competition

With the development of the Motor Transport in recent years the monopoly of railways in transport over land has to some extent been challenged and competition between road and rail transport service has over certain sections developed. In 1933 a Committee of two experts appointed by the Govt. of India estimated the annual loss of traffic by rail to the roads at something under Rs. 2 crores. The Railway Board placed this figure at about Rs. 3 crores in 1935 and in 1936 this was estimated at about Rs. 4½ crores. In the absence of suitable data it is impossible to assess the loss of traffic to the railways due actually to the development of motor transport. And it is also difficult to state what is the net result on the railways as a whole if the new traffic brought to the railway by motor service is set off against the traffic that is lost through competition. The measures which the railways have sought to adopt to meet the competition of road service may broadly be stated as follows :

1. Speeding up of trains.
2. Improved traffic facilities including introduction of short and light trains, extension of hours of booking, and delivery, introduction of door to door collection and delivery service etc.
3. Modification of rates and fares and introduction of special rates and passenger tickets;
4. Improved amenities for lower class passengers;
5. Coordinated services between rail and road through various agreements.

Section II.

Objectives to be achieved under Planned Economy.

1. Mileage, gauge and redistribution : Problems.

The first objective to be achieved in dealing with the railway systems of India is to remove the numerous barriers to smooth traffic movements and scientific operation of railway transport in the country. The most important obstacle in the development of Indian Railways is the adoption of a number of different gauges which were originally introduced with a view to suit the varying require-

ments of traffic. The evils arising out of these can hardly be removed in their entirety under present circumstances because nearly half the railways are on a broad gauge of 5'—6", while about 40 per cent of the mileage is constructed on a metre gauge of 3'—3.3|8" and the remaining 10 per cent on narrower gauges of 2'—6" and 2'—0". Under planned economy an attempt should be made at least to remove the two narrower gauges of 2'—6" and 2'—0", allowing the traffic handled by these lines to be dealt with either by the metre gauge lines or by suitable road services. The metre gauge lines should also be grouped and linked together to form as far as possible as complete chain of lines serving well defined regions so that a continuity of traffic movements without break of gauge may be ensured as far as practicable.

Another obstacle in the way of efficient operation of the railways in India is due to the unequal character and size of different railway systems. It is recognised that considerable improvement could be effected if the entire railway net work could be suitably regrouped and redistributed under properly constituted administrations, calculated to serve certain defined traffic regions and ports. Broadly speaking it may be stated that after the Company managed lines come under the management of the State on the expiry of their respective contracts an attempt should be made to redistribute and reorganise the systems as suggested above by amalgamating some of the lines which are at present managed by two or more administrative offices and rearranging the areas served by each organisation. Looked at from this point of view it is believed that the entire metre gauge line on the north of the Ganges along with the Assam Bengal Rly. might be grouped under one control, the Eastern Bengal Rly., the East Indian Rly. and the Bengal Nagpur Rly. up to certain well defined commercial centres on the northwest and south may be grouped under one administrative office with headquarters in Calcutta. The railways of South India can be placed similarly under one control with headquarters in Madras and similarly regrouping can be made of the railways in Central India, Bombay presidency, North India and Sind.*

* See Wedgewood Committee Report—Ch. XIII and Dr. Ziauddin Ahmed—Indian Railways, Ch. III Sec. 6,

2. **Policy, control and administration problems:**

The objectives to be achieved in these respects have become more or less simple as a result of the general acceptance of State ownership and management from 1924-25. The Indian Railways Enquiry Committee of 1937 did not feel happy over this decision and observed: "The history of State management in India is not encouraging and it seems clear that present methods are unsatisfactory. They tend to cramp initiative, impose complicated regulations and involve immense amount of routine correspondence. If therefore, the choice available lay between a continuance of private management and an extension of State management on existing lines we should strongly recommend the former alternative. Indeed we should feel bound to urge a radical reconsideration of the whole question of State management and fresh examination of the possibility of creating privately managed companies with Boards of management domiciled in India" (para 198 of the Report).

These observation are evidently based upon a thorough misunderstanding of the position in India but they create an impression that there is just the possibility of certain interested quarters raking up this old question once again although it was thought that this matter was finally disposed of. It is, therefore, necessary for the Planning Committee to make it perfectly clear that neither public opinion in India nor those who would be entrusted with a scientific organisation of the transport system of the country could entertain the thought of permitting private ownership of any portion of the railways and of perpetuating the evils of diversified ownership and management which have been too many in this country.

The objective which should be placed before the Committee should be not only to secure State ownership and management for the railway systems but also for all forms of public transport namely, inland waterways, coastal steamships, road services and airways.

With regard to control and management of the State-owned railways the machinery proposed to be set up under the Federal Govt. of India in accordance with the provisions of the Govt. of India Act 1935 admittedly has certain advantages over the present arrangements. The scheme for a Federal Railway Authority should be generally wel-

comed particularly in view of the growing tendency of interference by politicians into the field of detailed management and administration. It is however, regretted that the constitution of the Federal Railway Authority has been proposed in such a manner that national interests cannot be duly represented on the same and the much needed provisions for co-ordinating various means of transport may be overlooked. If the future independent Federal State of India can manage to nationalise the entire machinery of transport within the country as well as coastal steamer services, then the organisation for control and management should be vested in some semi independent Central Board of Communications looking after not merely the railway transport but also road, air, inland waterways and coastal steamship services. Subject to the general supervision of development and administration of the different transport systems by this Central Board of Communications it should be possible to ensure efficient management of each system through properly constituted Commissioners of transport dealing with each machinery separately. As regards individual transport undertakings the actual management and details of day to day working should be left to General Managers appointed for a certain number of years purely on the basis of their merit and efficiency.

3. Traffic.

The National Planning Committee visualise a development of India's socio-economic conditions under planned economy by nearly 100 per cent in ten years which necessarily imply that traffic on the railways would increase both in passengers as well as in goods by at least 75 per cent. At the same time it is believed that as a result of the elimination of a good deal of unnecessary and uneconomic movements of similar commodities over long distances when proper zoning of supply and production will be devised and transport will be rationalised, there may be a substantial reduction in the pressure on the railways in handling traffic, particularly long distance traffic.

In the absence of any material in this connection it is difficult to presume to what extent the anticipated increase in the tonnage or number of passengers originating will be neutralised by the reduction in the length of haulage. Taking into consideration the normal increase of traffic on Indian railways during the last few years it may be gene-

rally assumed that under planned economy the railways of India will be expected to handle at least 50 per cent more of their present traffic. That is to say they will on an average be called upon to carry nearly 750 million passengers and nearly 130 million tons of goods. Railway experts who have from time to time examined the equipments of Indian railways believe that with proper care and improvement in the operating conditions the railways of India can without much difficulty handle this additional traffic and in fact in some respects the present equipments have been on such a lavish scale as may obviate the necessity of new purchases for a long time to come. It is practically impossible to express any definite opinion on an issue like this unless the entire character and course of traffic, its volume, nature, direction, haul and conditions of transit are definitely known.

4. Railway Finance

As it is contemplated that the Railway property as well as other transport agencies should be directly owned and managed by and on behalf of the State under planned economy, it naturally follows that the responsibility for financing new constructions in future as also for undertaking the expenditure on reorganisation and improvement should primarily devolve on the State. It is however the experience of all countries that when commercial undertaking of such a huge dimension is left dependent upon the State directly, considerations of commercial success in their financing and management often have to yield place to political considerations and to the exigencies of the State exchequer. It is therefore, recognised that in order to secure a reasonably steady supply of finances to improve, modernise and expand the railway net work, the railway funds should be separated and the Federal Railway Authority should be entrusted with the management of the railway properties primarily as a commercial undertaking with its own funds independent of general finances of the State. The Federal Railway Authority or preferably the Central Board of Communications should thus be free to administer the funds in their own way and to raise new capital on the security of the property vested in them. If such an arrangement is made it should not be impossible for the Board of Communications to draw up suitable schemes for transport development which are not only likely to provide for more scientific and convenient handling of traffic but

also to secure commercial success for the undertakings. It should not then be difficult also to enlist the co-operation of private financial sources through the issue of Stocks or Debentures on the security of the transport property without throwing any undue burden on the credit or finances of the State in general.

The question as to what extent the Federal Railway Authority or the Board of Communications should be called upon to share the burden of the requirements of Central Govt. and to contribute certain sums to the Central Revenues annually, has to be settled after carefully examining various claims in this connection. While on the one hand it may be argued that the General Tax Payer who has undertaken the capital liability of the rly. property should reasonably receive some annual return for the investments made over and above the interest payable and the Sinking Fund charges, on the other hand, it may also be claimed that through the development of better transport, economic and political improvements generally have been secured to such an extent that these by themselves should be taken as ample rewards for the money spent on railway development and therefore the railways should not be required to contribute anything to the general revenues by way of profit but should only undertake the liability to meet the required interest and Sinking Fund charges. It may not be out of place here to mention that even while accepting the present liability for capital at charge on State-owned lines the Federal Railway Authority, or the Board of Communications as the case may be, will be taking up a proportionately greater capital liability than what the present valuation of the Railway property would justify. It is well-known that the railways of India are over-capitalised, firstly, because they were constructed on a lavish scale of expenditure, regardless of economical working, secondly, because a number of lines have been undertaken not so much with a view to their commercial success but for political and strategic reasons, thirdly, on account of the old privately owned railways heavy premia had been paid and lastly, because the system of accounting followed in estimating railway capital has been such that does not provide properly for writing down and writing off capital when this may be called for.

The Indian Railway Enquiry Committee of 1937 critically reviewed the financial outlook of the Railways and came to the conclusion that after main requisite appropria-

tions for the Depreciation Fund and to the Railway Reserve Fund which are essential to the maintenance of their efficiency it will be difficult for the Railways to earn more net revenue in the coming years than will reasonably suffice to secure the interest on capital obligations.

In view of this they did not consider that there was any prospect consistent with sound management of balances accruing which would be used in relief of general taxation. They therefore thought that this situation should be recognised and that the Railways while they should be expected to maintain **full** solvency should not be regarded as a possible source from which contributions to the general revenue might be derived. (See para 213—Wedgewood Committee Report).

5. Rates and Fares.

The development and present position of rates and fares on Indian Railways have been briefly outlined in a previous sub-section. It has been pointed out that one of the important grievances against the present rates structure is that most of the existing rates were introduced with a view rather to help the foreign trade of the country than to encourage indigenous trade and manufactures. Although with the large appreciation of the essentially commercial character of the railway business certain changes in the policy have been noticeable during recent years yet the principal structure of the rates remains more or less unaltered. Under planned economy, therefore, considerable modification in the present rating will be called for, first, with a view to remove the anomalies that are existing, secondly, with the object of simplifying the classification and rating structure and thirdly, in order to ensure that the rates and fares generally serve to further the aims of national planning through the encouragement of indigenous industries and trade. It should also be one of the objectives to rationalise movements of traffic and to devise rating in such a manner that secure to the railways their necessary earnings but at the same time prevent avoidable duplication of movements by reducing unnecessary carriage from long distances, after suitable development of industries and supplies locally or within homogeneous zones have been achieved.

Two Problems are likely to arise if a policy like this is adopted under planned economy viz: how to ensure the economic management and to maintain earnings of the railways, if the railways are not permitted to charge what

the traffic can bear and how far it would be prudent to utilise the railway machinery to subsidise local industries and to provide a protective barrier for indigenous business. The National Planning Authorities will have to examine the difficulties and dangers involved in a policy of this character very carefully and should devise their schemes of development of industries in such a manner that neither inter-provincial jealousy nor economic inefficiency may receive any encouragement through the measures recommended by them.

It has been previously suggested that the entire transport machinery should be placed under the control and management of a semi-independent Board of Communications and even if that is not possible, it is proposed that the railway property should be vested in a Federal Railway Authority independent of the interference of the Legislature or the State in their detailed administration. Such a Central Board of Communications or the Federal Railway Authority would naturally conduct its affairs in such a manner as would enable the financial position of the transport undertaking to be maintained in tact, or in other words, there will be a tendency for the management to earn as much profit as they can manage. Under planned economy some suitable check will have to be devised to prevent such a tendency and to see that the theory of commercial management of a transport undertaking may not be carried too far. It may accordingly be laid down in general that the Federal Railway Authority or the Board of Communications as the case may be, must see that the net earnings of the railways do not exceed, after a period of 3 or 5 years, much beyond the standard revenue required to meet the Depreciation and Reserve Fund contributions and the interest charges. In the event of such signs being noticed it should be competent for the State to direct certain improvements in the services or modification in particular rates with a view to encourage indigenous business in general or any industry in particular. In special cases where a direct encouragement to an industry may require large capital investment on the part of the railways for which adequate return may not be expected within a reasonable period it should be the duty of the State to provide suitable compensation to the railways for helping to establish and encourage such an industry.

An important step taken with respect to rates disputes was the institution of the Railway Rates Advisory Committee in India in 1926. It is proposed to strengthen this body with the inauguration of the Federal Railway Authority and with respect to rates and other problems the new Constitution provides further for the establishment of a Railway Rates Tribunal.

While welcoming the establishment of Such a Tribunal, the authorities entrusted with National Economic Planning should secure the continued advice of an expert body of men composing the Rates Tribunal so that improvements and modifications in the rates structure may be effected even without the initiative from the public.

6. **Rail Road Competition**

The objectives to be achieved under planned economy in regard to rail road competition will be dealt with in detail under a later section. It may be generally laid down that the aims of the Planning Commission should be to provide for traffic the most convenient, the most efficient and most economical transport services. The suitability of a given form of transport will of course, vary with the geographical and economic conditions in a particular region within the country and it will be for the planning authority to determine, in consultation with expert advisors, as to what particular form of transport would serve the requirements of various classes of tarffic in a particular region and to what extent the development of each form of transport service should be encouraged in a particular area. Broadly speaking, it may be urged that not only the railways and the road services but also airways and inland and coastal water services should be co-ordinated to maximise the benefits of a cheap and efficient transport service in the country. In what proportion each one of these services should be allowed to develop in the interest of social and economic welfare of the country as a whole must depend on a careful examination of all aspects of the question in order that such an examination may be made by a competent authority free from bias or prejudice in favour of any existing or vested interest, a Central Board of Communications should be constituted composed of impartial experts and representative men with vision and outlook to determine the actual steps to be taken with regard to each machinery of transport service.

Section III.

Ways and Means for achieving the objectives under Planned Economy

The agencies which will have to be devised for securing the objectives under planned economy as set out above will depend to a large extent firstly, on the constitution and machinery of the State and secondly, upon the nature and availability of experts whose services may be requisitioned for the execution of various schemes. Broadly speaking, it is recognised that all transport property should be nationalised. How far this will be practicable will depend upon the determination of the people and the initiative of the State. It is also possible to replace private ownership of some of the transport undertakings by the ownership of Provincial Govts., District Boards or Local Boards and Municipalities and not by the Central or Federal Govt. necessarily. If this is found more practicable in view of the vastness of the country and the diversity of conditions under which various transport organisations are functioning at the present moment, some well planned policy will have to be laid down determining which particular transport service should belong to Local bodies and Provincial Govts. and which to the Federal or Central Government of India. Generally speaking it may be stated that such services as deal with strictly local traffic in goods or passengers with a range not beyond a certain minimum area or zone may conveniently be left under the ownership of local bodies with control and management vested in a body similar to and acting under the guidance of the Federal Railway Authority or the Central Board of Communications. Under such category may come the urban tramway or motor bus services as well as the suburban railways, river and motor transport arrangements.

A question that should thus be properly dealt with by the Planning Authority is as to whether and if so how there should be some scope left for private enterprise and initiative in the matter of transport services in any part of the country.

Once the machinery for planned development has been decided upon and the policy of State ownership and management by the expert commissioners determined, the authorities of the Planning Commission will have to examine how far the increasing demand for transport faci-

lities, which is estimated to deal with nearly double the economic resources of the country in course of ten years, can be met by better utilisation of the existing facilities and how far it would be necessary to provide for extended facilities of different modes of transport. Obviously the first attempt should be, to try to meet the new demand by better utilisation, rationalisation and reorganisation of the present resources. After this has been achieved further facilities will have to be arranged for and in so doing a careful examination will have to be made of the proportion in which each mode of transport should be allowed to develop in the interest of efficiency, economy and convenience of the public. It may be generally mentioned that railway facilities are often found to be comparatively costly and inconvenient in dealing with small units or short distance traffic while motor services are distinctly unsuitable for handling long distance heavy traffic of cheap varieties. The planning authority therefore will have to make necessary adjustments and arrange for a co-ordinated distribution of the entire traffic, making suitable use of each means of transport with the sole objective of maximising the service to the people.

The general directions in which National Planning should be undertaken with a view to utilise the transport services in the interest solely of a planned economic and social development of the country as a whole have been outlined above. In undertaking such a planned control or development of transport, however, several other allied issues will also have to be kept in view and it would not be out of place to make a brief reference to some of them.

The first of such problems would lie in the development of the industries like the manufacture of locomotives, wagons, motor, tyres and various descriptions of stores and appliances required for transport undertakings and the question of the purchase, storage and distribution of the stocks of such materials. The second problem relates to the policy that will have to be followed in regard to labour and staff problems. The railways constitute in themselves the largest single employer of labour in the country and when these will be owned and managed by the State democratically organised the problem of retaining a healthy coordination between the management and the staff will become very important.

The next set of questions that will require increasing attention under planned economy include improvements in the amenities to lower class passengers, the maintenance and development of Railway Collieries and ancillary services, electrification and coordination in the utilisation of cheap power and the problem of dealing with the strategic railways.

The contribution of transport to the cause of Indian Trade and the making of the Indian Nation has been immeasurable. Barriers of ages have been broken and the time-worn practices and prejudices overcome. There still remains a great scope for development and it is confidently believed that with suitable planning in transport and with the substitution of co-ordination instead of haphazard development great advance will be achieved for the good of the community at large.

(See—Sanyal on Communication & Transport. Mukherjee —Economic Problems of Modern India—ch. XIII.)

COPY OF CORRESPONDENCE BETWEEN MR. M. A. MASTER AND THE N. P. C., IN CONNECTION WITH THE INTERIM REPORT OF THE TRANSPORT SUB-COMMITTEE.

Letter dated 2nd May 1940 from Mr. M. A. Master to the Hon. Gen. Secretary, N.P.C.:

Dear Sir,

I am sorry I have not been able to go through up to now the Interim Report of the Transport Sub-Committee which you had forwarded to me as I had no time to do so owing to the serious illness of my wife and other important pre-occupations. I only glanced through it yesterday and I would like to invite your attention to two or three important points.

It has been stated—

"in the last two or three years 40 per cent of the earnings of coastal traffic in freight has gone to the Scindia Steam Navigation Company, 10 per cent to the Asiatic Navigation Company and 50 per cent to foreign shipping companies."

This is an entirely erroneous statement. The total quantity of cargo which has been carried by all Indian shipping companies on the Coast is less than 22 per cent of the entire cargo carried in the coastal trade. Let me give you the figures for the three years ending June, 1938.

Year.		Total quantity of cargo carried on the Coast.	Quantity of cargo carried by Indian Shipping companies.	Percentage of the cargo carried.
1935|36	Tons	68,44,080	14,26,602	20.84
1936|37		66,03,236	15,05,839	22.8
1937|38		66,57,740	14,07,713	21.14

The remaining 80 per cent of the cargo has been carried by non-Indian shipping companies, mainly British shipping companies and the very largest portion of that cargo has been carried by the steamers of the British India and the Asiatic Steam Navigation Companies. As regards the passenger traffic the share in the traffic between differ-

ent provinces was hardly 20 per cent. You will, therefore, realise that the Scindia Company could not have earned 40 per cent of the earnings of the coastal trade.

As I have not got Schedule No. 22, I am not in a position to say whether the figures regarding the Haj traffic are correct. In any case, I give you below the number of pilgrims carried between India and Jeddah during the last 10 years.

Year.	Number of pilgrims.
1929|30 ..	14,288
1930|31 ..	8,728
1931|32 ..	12,576
1932|33 ..	10,637
1933|34 ..	9,792
1934|35 ..	13,079
1935|36 ..	10,466
1936|37 ..	12,833
1937|38 ..	19,664
1938|39 ..	19,278

I may mention that except for the participation of the Scindia Company during the years 1937|38 and 1938|39 the Haj traffic has practically been the monopoly of the British Company, the Mogul Line. It was only during 1937|38 that the Scindia Company carried 3,175 pilgrims and in 1938|39 the Scindia Company carried 4,444. It had to face a serious rate war and in view of the hostile decision of the Government of India, it had to retire from the Haj traffic during the last season.

Freight has not been booked by the Stores Department now. It is booked by the suppliers in view of the fundamental alteration in the policy of the store purchase for India. I may suggest that subsidies and bounties should be given to shipping as well as Shipbuilding industries and the present policy of encouraging Government officials entitled to leave passages to travel by British ships should be changed and they should be asked to travel by Indian ships only.

As I have not got Table 26, I am not in a position to verify the figures.

At the beginning of Chapter 11 it has been stated that "the aim of the Planning Commission being at least to double in 10 years the total volume of material goods produced in the country." I do not know to what extent it is intended to increase the number of ships and consequently the Indian Mercantile Marine in the country.

In Chapter 11, I find the following statement :

> "People in the Konkan coast for example being too poor to pay bus or railway charges have to go without transport facilities in the absence of suitable and regular coastal transport facilities."

This does not correspond to facts. As a matter of fact the three companies have been meeting the need of the Konkan traffic and the Konkan public was perfectly satisfied with the number of steamers that were placed at their disposal. It was only after the war broke out that all these ships have been requisitioned and the traffic has to be carried on by three steamers only.

Chapter V, para 3: I consider it essential that the Planning Committee should state unequivocally that not only should no foreign vested interests be allowed to be created in any new industry in this country but steps should be effectively taken to see that the existing allied vested interests are replaced by national ones.

Last but one paragraph, Chapter V. It has been stated, "these industries must be State enterprises etc." I want to draw your attention to the fact that the note issued by the Chairman, dated the 11th February, was not before the Committee. The question as to whether these industries should be State owned or not was not discussed by the Sub-Committee. The note of the Chairman stated : "These suggestions are being forwarded to the Sub-Committee for their consideration. It is open to them to make their own recommendations." You will agree with me that it is therefore not fair to the Committee to say that it is their opinion that these industries must be State enterprises etc., when not only was the question not discussed by them but they had not even the privilege of having the views of the Chairman before them. You will also agree

with me that it should not therefore be included in the Report as it has a great fundamental bearing on the whole question.

You will remember that the point was thrashed out and agreed to by the Committee that National Planning meant that the industries should be owned, controlled and managed by the nationals of the country. This fundamental aspect underlying the entire planning should have been stated definitely in the Report. I am sorry to say that that has not been done.

Yours faithfully,

Sd. M. A. Master.

Copy of Telegram dated 13th June 1940, from Rangoon, from M. A. Master to the Hon. Gen. Secretary, N.P.C.:

"Reference Interim Report Transport Sub-Committee deeply regret neither points mentioned my last letter incorporated nor courtesy answering letter extended to me stop despite definite understanding at last two meetings subcommittee question overseas shipping not properly dealt with stop asterisk note bottom page five cyclostyled copy stating forty per cent of the earnings of coastal traffic has gone to Scindia Company absolutely incorrect stop even position national shipping coastal trade not even outlined page nine para two stop statement people in konkan coast compelled use bus or railways owing absence of suitable and regular transport facilities quite incorrect for years past number of shipping companies operated west coast meeting needs Konkan traffic stop only after their vessels were requisitioned they found difficulties regret although same pointed out by me last letter position not rectified stop question large shipbuilding industry dismissed only one line which deeply regrettable owing its great importance to India both for purposes of trade and defence stop regret self cannot therefore be party to approval this Interim Report."

Letter No. 2571 dated 14th June 1940, from the Hon. Gen. Secretary, N. P. C. to Mr. M. A. Master.:

My dear Mr. Master,

Your telegram dated the 12th from Rangoon, was received here on the 13th, which was a Public Holiday, and

as the 13th also was a Public Holiday I could only deal with it today.

I have sent a copy of the telegram to the Chairman and Secretary of your Sub-Committee, and have consulted the Chairman, who happened to be in Bombay today, for reply. Your letter of the 2nd May was duly forwarded to the Chairman and Secretary of the Sub-Committee, but, as I was myself at that time occupied with the work of the Planning Committee, which was in Sessions from the 1st to the 15th May, I could not deal with the matter immediately it was received; and, subsequently, it escaped my attention, on account of the pressure of other work connected with the N.P.C.

The Report of the Sub-Committee was an Interim Report, which, however, as it happened, was not placed before the Planning Committee, for lack of time, and could, therefore, not be considered by that body. It is coming up for discussion at the next Sessions of the Planning Committee, beginning from the 21st June, so that there will be time still for the remarks made by any members of the Sub-Committee to be included in the Report, if the other members agree. I have, of course, no objection myself to incorporate the substance of your remarks, and the Chairman has shown himself willing also to consider doing so. The Interim Report will be placed before the Planning Committee, as at present programmed, on the 23rd inst; and if you are in Bombay before that time, I trust you will make it convenient to consult informally with the Secretary or the Chairman, as to the best method of incorporating the substance of the text of your remarks.

I learn from your office on enquiry that you are likely to be in Bombay any time and so, instead of wiring to you to Rangoon, I am sending this letter to your Bombay address, in the hope that it will find you more quickly there than if I wire to you to Rangoon when the communication might not be delivered in time.

Wtih kindest regards,

Yours sincerely,

K. T. Shah

Hon. Gen. Secretary,

National Planning Committee.

THE COPY OF CORRESPONDENCE BETWEEN MR. A. BOXALL, CHIEF COMMERCIAL MANAGER, N. S. RLY., AND THE N. P. C. OFFICE :

Letter dated March 28, 1940, (No. CG. 71|39) from Mr. A. Boxall to the Hon. Gen. Secretary, N.P.C.:

Dear Sir,

I am obliged for the Report sent with your letter No. 2331 dated 24th March 1940.

I would be very interested to see the tabulations which were not sent with the Report, as without these I am unable to say how a number of figures in the Report itself have been arrived at.

I notice that, in the section dealing with road transport, the question of the cost of providing and maintaining roads in relation to the traffic carried has not been mentioned, and I think, if you examined this question, you would find it of considerable importance.

Yours faithfully,

Sd|- A. Boxall.

Letter dated April 5, 1940, from Hon. Gen. Secy., N.P.C. to Mr. A. Boxall :

Dear Sir,

Thank you very much for yours of the 28th ultimo, acknowledging receipt of the copy of the Report from the Transport Sub-Committee sent to you. As you may be aware, it is only an Interim Report, by no means fully considered in all the bearings, to the reference made to the Sub-Committee, and, therefore, much may have to be added to it, when the Report is cast into its final shape with all necessary and relevant details.

As regards the tabulations, the relevant portions of the tables have, I understand, been already included in the copy of the draft sent to you, and the other tables are being typed. When ready, they will be immediately despatched to members.

Regarding your remark about the cost of providing and maintaining roads in relation to the traffic carried,

I quite agree that it is a very important question, and when the Report is completed, I am sure, a section will have to be added to deal with this matter. In the meanwhile, if you have any material, which could be useful in that direction, I shall appreciate it very much, if you could kindly send it.

Yours faithfully, etc.

Letter No. CG 71|39 dd. April 19, 1940, from Mr. A. Boxall:

Dear Sir,

I am obliged for your letter (No. 2364 dd. 5th April 1940) and I shall await the tabulations.

With regard to the cost of roads the main factors to be taken into account are :—

1. the annual cost of interest and maintenance of roads,
2. the petrol tax;
3. the vehicle taxation.

I am afraid that I have not the opportunity to examine and comment on available figures on a general basis which is what would be necessary for any large scale consideration of the problem, but it is apparent that taxation at say Rs. 400 per annum per vehicle might be equivalent to say interest and maintenance charges on 1|3 mile of road.

The total number of such motor vehicles operating is, of course, nothing like 3 per mile of road and it is apparent that taxation must pay only a small part of the charges incurred.

Yours faithfully,
Sd|- A. Boxall.

Letter No. CG 71|39, dd. June 5, 1940, from A. Boxall :

Dear Sir,

Your letter No. 2364 dd. 5th April 1940 :

I am obliged for the tabulations I have now received and I agree broadly with much of the Interim Report of the Sub-Committee, though, in general, I consider that

it is open to criticism in that the material available has not been examined in detail and that the expressions of opinion of the Sub-Committee are of too general a nature and sometimes wrong.

As an example of error on page 2 of the report it is stated that "railways suffered a loss to the extent of Rs. 187 lakhs due to road competition", but in Table IX it is clear that this figure only refers to an estimate of losses in passenger traffic for specified railways. Such statements as that in the Report, if accepted by an examining body would be dangerous.

The total annual earnings of a bus or heavy motor vehicle may be taken as over Rs. 5,000 (the figure for the Hyderabad Service exceeds Rs. 8,000). Table X gives the number of buses and heavy motor vehicles as 40,000.

This means that public expenditure on road transport at present must exceed Rs. 5,000 x 40,000 = Rs. 20 crores, it may exceed Rs. 30 crores, whereas the total railway earnings are only Rs. 108 crores. This reveals the importance and urgency of this problem.

What is in my view necessary is first a detailed and critical examination to determine the basic cost to the community of moving traffic by road, followed by a similar examination concerning other forms of transport; the figures for railways are published.

I place the road costs first because road services can develop with great rapidity and action in time can not only prevent a mistake which may prove most costly, but can make much more effective use of the road vehicles and equipment available.

My own experience leads me to conclude that in Hyderabad the average cost of moving a passenger by road is over twice that of movement by railway, provided, similar conditions of service apply to staffs of the two services and reasonable facilities are given by road while the average cost of transport of goods by road is more than five times that of transport by railway. These figures allow nothing for the cost of the roads.

Railway services are maintained without loss to the community by charging low rates for cheap commodities and high rates for expensive goods. Road services can compete with the railways for commodities for which

high rates are charged, but this inevitably costs the community more because the road transport itself costs more.

The remedy is co-ordination. This means that the road services must feed the existing railways. They must not compete and roads must be aligned accordingly.

Road services can feed the railways more efficiently than carts except for very short distance as light traffic or in periods when agricultural conditions make an abnormal number of carts and animals available for transport.

Figures for sea and canal competition may show that within certain limits transport by water is cheaper than transport by rail.

The fundamental and urgent need is for a determination of the basic costs for various parts of the country. Without really reliable figures any plan for co-ordination must be open to grave doubt and I hope that members of the Transport Sub-Committee who are in a position to supply or obtain these figures will do so.

Yours faithfully,
Sd|- A. Boxall.

Letter No. 2621 dd. 20th June 1940, from the Hon. Gen. Secy., N. P. C.:

Dear Sir,

With reference to your letter No. CG. 71|39, dated the 5th June, I have submitted it to the Chairman and Secretary of your Sub-Committee and am instructed to reply as under.

Your letter invites attention to very important considerations which must, no doubt, be taken into account, before the Final Report of the Sub-Committee is prepared and submitted to the National Planning Committee. At the present time it is only an Interim Report, which the Sub-Committee will have to finalise, and dispose of all such questions as may have been raised by the Members of the Sub-Committee on one topic or another. I think, therefore, this matter may well be brought before the Sub-Committee at its next meeting whenever it is convenient to the Members to hold one.

The lack of time and pressure of work in general on the part of the Members may be urged as excuse for lack of examination in detail which you have noticed in the Report; while the composition of the Sub-Committee was such as to make it inevitable to express only general opinion on questions which may be of a controversial nature. As for any opinion that you consider to have been wrong, I would be obliged if you will draw attention to any specific remarks of that kind which may be rectified if found necessary.

The errors you have pointed out, in so far as they are errors of fact, will be rectified while the Report is presented to the National Planning Committee. While agreeing with you that "a detailed and critical examination to determine the basic cost to the community of moving traffic by road followed by a similar examination concerning other forms of transport," may be necessary, the resources at the disposal of the Planning Committee, and, therefore, at the disposal of this Sub-Committee for carrying out such an investigation, are so limited, that the Sub-Committee fear it would not be within their power to carry out such an investigation. The National Planning Committee, however, would make recommendation to the National Planning Commission which will, it may be hoped, have both the means and the authority to carry out this investigation. If, however, you have any ready material available with you, which can throw light on the point, the Sub-Committee would appreciate very much if you would make it available so as to improve the Final Report which is to be prepared.

The question of co-ordinating the road and the railway services so that, "the road services must feed the existing railways" as you seem to view the problem, is open to question if carried beyond a certain degree. Roads, no doubt, serve as feeders to railways to some extent; but roads may also act as independent means of communication and transport, which cannot be overlooked by the Planning Committee. It is, however, one of the problems which may well be considered more fully by the Sub-Committee before it presents its Final Report.

Your last point, "that the fundamental and urgent need is for a determination of the basic costs for various parts of the country, also requires very considerable and

detailed investigations which, as I have pointed out above, is beyond the resources of the sub-committee and as such cannot be taken up just now.

I do hope this will be satisfactory to you and that at the next meeting of the Sub-Committee, whenever it is held before the Final Report is prepared, you will be able to furnish material if available to you ready made, so as to help the Sub-Committee in arriving at proper decisions.

Yours faithfully, etc.

Letter No. CG 71|39, dd. 13th July 1940, from Mr. A. Boxall;

Dear Sir,

Your Letter No. 2612 of 20-6-1940 :

I am obliged for your letter and appreciate the spirit it conveys.

I will mention some details of the report.

A. **Chapter 2 p. 73.** Existing railway rates have certainly not been deliberately framed to assist exports. Rates are based on business considerations, and the reason for low rates to ports or otherwise are economic. No data is given to support the statement in the report and I certainly would not sign a report with such a serious unsupported allegation.

B. **Chapter 2, Ps. 74, 75.** These pages are of a very general nature and in my view, presentation in such a manner detracts from the value of the Report which should, I suggest, be as far as possible a critical and dispassionate examination of available data with the object of providing sound deductions for use by a controlling authority. Similar remarks apply to Chapter III, p. 77.

C. **Chapter 4, p. 79.** It is assumed that using goods at Ahmedabad produced at Bombay, in preference to organising production at Ahmedabad, is a social waste. But no attempt is made to support this assumption. In practice, concentration of efficient production can result in reduction of overhead or rather independent costs which proves sufficient

to cover transport costs from and to large distances from the factory, e.g. our energies can be better employed in providing a limited number of manufacturing points and moving material from and to them rather than extending the number of factories, there is less total effort for the same result. Outstanding cases are, of course, such as the larger mass production undertakings which alone render many luxuries available to people of modest means. I am sufficiently optimistic to believe that there is the possibility of an immense improvement in the standard of living in India by industrial effort in this country, and to that extent, I believe, that transport costs, particularly those involving export and re-import, are in some cases uneconomical, but the proof of this will be found in the increase in industrialisation which economic opportunity itself produces and unless there are facts which can be given to support the particular case quoted, I think it is better omitted.

My feeling about the Report as it stands is that it is the work of men who really have an interest in the problems they touch on, but I think that unless every expression of opinion is supported by data and a developed argument, the result will not carry real conviction.

I suggest elimination of anything in the nature of generalities and I believe that those who finally use the Report will be grateful. I will send you some data as soon as I can compile it.

Yours faithfully,
Sd|- A. Boxall.

RESOLUTIONS OF THE NATIONAL PLANNING COMMITTEE ON THE REPORT OF THE SUB-COMMITTEE FOR TRANSPORT SERVICES.

The Interim Report of the Transport Services Sub-Committee was, in the unavoidable absence of Dr. D. R. Gadgil, Chairman of the Sub-Committee, presented by Dr. F. P. Antia, Secretary of the Sub-Committee, on the 23rd June. Discussion concluded the same day, and the following resolutions were passed :—

1. The transport facilities of various kinds available in this country, compare unfavourably with the corresponding facilities in modern industrialised communities, with due regard to their area, population, and productive efficiency.

2. Considering each of these forms of transport service in India, though in general the railways may be said to meet the present traffic demands upon them, there is room for internal economics in the working of the railways, and better adjustment of the available traffic suitable for Planned Economy.

3. Under Planned Economy both these requirements of the railway service will have to be examined before any programme of railway expansion can be considered. The Planning Authority will have to distribute the available traffic, so that the fullest utilisation is made of the existing track, rolling stock, terminal facilities, and ancillary services of the railways.

4. Assuming that Planned Economy results in an increase of the total volume of goods and passengers having to be moved by railway, it will be a part of the functions of the executive authority charged with carrying out the plan, to determine how this extra traffic in goods and passengers should be apportioned as between the railways and other means of transport.

5. As regards the roads, the present mileage of all motorable roads, metalled and unmetalled, compares unfavourably with the corresponding facilities in modern industrialised countries. In view of the relative economy of road transport for comparatively small scale production, and short hauls,—both characteristics of Indian economy today,—the Planning Authority will have to examine the possibility of developing the road service as an alternative or supplementary, to the railway carriage.

6. Roads, to be useful for efficient transport service as an integral part of the planned programme, will have to be considered, not only as national highways, but provincial as well as local means of transport and communication. One of the most considerable handicaps of the existing economy in India is the lack of cheap and adequate transport service in rural areas, which, it is considered, is likely to be provided by a better development and use of the roads as between the villages as also those connecting the villages with markets. The National Planning Authority must, accordingly, devise means to provide this form of transport in every region considered to be the unit for this purpose, in the planned programme.

7. Another handicap for an adequate development of road as well as railway services is the absence of the necessary manufacturing industries for the production of locomotives, automobiles, wagons and coaches, their parts and accessories, within the country. The Planning Authority must attend to the establishment as soon as possible of the necessary industries in this regard.

8. Apportionment of the traffic between roads, railways, waterways, inland and coastal, and airways will have to be determined by the National Planning Authority with due regard to the interests of the producers and the consumers, in each case, as also to the cost of carriage involved. This means that each of these forms of transport has its appropriate field of service, which, though not exclusive, may yet be regarded as its proper sphere within which it may render the best service and produce the utmost economy.

9. Facilities for inland waterways in the shape of perennial rivers and navigation canals based upon them, though abundant in some parts of the country, have not been utilised as fully as they might have been, mainly because of the competition of the railways. This competition went on unchecked ever since the Railways came into being because of the financial stake of the State in the commercial success of the Railways. It is necessary that these facilities for inland waterways should be fully developed.

10. The volume of traffic, both in goods and passengers, carried by coastal ships in Indian coastal waters, is very considerable, both in value and in quantity. But the

Indian share in carrying this traffic is comparatively insignificant, and of very recent date, owing to the handicaps placed by the foreign vested interests in this sphere. All coastal traffic must be reserved for national shipping.

11. India has a very considerable volume of foreign seaborne trade, passenger traffic and mails. An Indian National Mercantile Marine is, therefore, urgently needed and should be developed. A modern ship-building industry, along with its auxiliary industries, should be established as early as possible. India should be self-sufficient in regard to all her shipping requirements and should not depend on foreign shipping services.

The National Planning Committee was of opinion that the Transport Services Sub-Committee should consider, for the purposes of their final report,

(i) The question of the transport services from the point of view not merely of economic return but also of aiding in the task of national development and social well-being of the community.

(ii) The organisation for the central control and co-ordination of the transport services.

(iii) Animal transport, especially for purposes of rural communications, and the development of cheap village roads.

(iv) The use of trolley buses where electric power is available.

DRAFT QUESTIONNAIRE FOR THE SUB-COMMITTEE ON TRANSPORT SERVICES.

Question (1) What are the facilities now available in your Province (or State) in regard to the transportation of goods and passengers by—

(a) Railway, stating the mileage open for traffic of the various kinds of rail road;

(b) Roads, stating also the mileage of all weather as well as fair-weather or kutcha roads, lanes, and pathways open to vehicular traffic, or the carriage by pack animals, of goods and passengers.

(c) River, or other forms of water transport, like coastal shipping, stating the extent of such transportation service available; overseas; and

(d) by Air?

(2) Could you state the amount of traffic carried respectively by—

(a) Railways;

(b) Roads;

(c) Water Communication; and

(d) Airways;

in respect of goods and passengers, by value and weight in your Province (or State)?

(3) What are the needs of your Province (or State) in respect of the various forms of Transport Service in relation to the existing needs for the carriage of goods and passengers, and in view of the intended degree of development under the Plan so as at least to double the production of material wealth in the country, and effect consequential and proportionate improvement in the standard of living?

(4) What are the ways you would suggest for developing the Transport services in any of

these forms, so as to meet most effectively the Transport needs of your local economy as an integral part of the National Economy?

(5) What are the principal articles requiring transport, and over how long distance, within your Province (or State), and as between your Province and any other part of the country, or with any foreign country?

(6) Do you consider that there are any particular advantages of any form of Transport, as compared to another form of Transport service (e.g. of Railways over Roads, or of Roads over Water Transport, or Vice versa) under existing conditions, or with improvements, by introducing mechanisation into the particular forms of Transport, which would be more in accordance with the requirements of the existing economy of your Province, or which will result as part of the National Planning?

(7) How far would it be more economical to develop either Railway Road, or Rail, or Water Transport service in your Province (or State), in view of the nature of the local topography, the average volume of traffic available, and the aggregate local economy?

(8) Could you give a comparative statement regarding the freight charges or transport rates for goods or passengers, per mile, per unit of weight, or per mile per passenger, distinguishing between the different forms of Transport services available in your Province (or State) and the corresponding freight rates and fares for each of them ?

(9) How do these freight charges bear upon the local productive organisation, in respect of each major article of produce in industry and agriculture, as well as on the consumer ?

(10) To what extent do the freight charges, etc. in your Province (or State) on the several forms of Transport Services compare with corresponding charges in other parts of your

Province, in other Provinces, other States, or other countries?

(11) What relation should, in your opinion, Transport charges bear to the costs of production of any given article, and its place in the aggregate economy of a country?

(12) What are the amenities or facilities offered by public carriers, whether by Rail, River, or Road Service, by Sea or Air in regard to safety, regularity and punctuality of their services, as well as the economy of the rates charged. Would you suggest any improvement in this regard?

(13) To what extent the State regulates, at present, the Transport Services, whether conducted by Rail, Road or River, Sea or Air, in respect of the rates and fares, settlement of disputes arising between the carrier and his customer, the development and supply of additional facilities, prescribing safety apparatus needed for ensuring perfect service and in other similar respects, by Legislation, or Executive action?

(14) What improvements, if any, would you suggest in the machinery of regulation and control of the Transport Services of this country, their volume and variety, equipment and operations, staff and management, so as to make them most effectively to contribute to the Plan of our National Economy?

(15) How far is the fullest and the most economical use made of the existing Railway facilities and equipment for affording the most economical Transport service to the country, its agriculture and industry, as well as the movement of animals and human beings? How should the same be developed and worked so as still more economically and effectively to render this service?

(16) To what extent would it be necessary in your opinion to develop, still further, any

one or more of the several forms of Transport Services, mentioned above in view of the plan, which is intended at least to double the national wealth in a period of 10 years? How far would this increased movement of men, animals, and goods, possible to be accomplished by improving the existing facilities, without any extension or addition to the same, i.e. by utilising to the utmost the existing Permanent Way, Rolling Stock, Terminal facilities, and the like ?

(17) How far is the division of functions between the Central or Provincial or State Governments in regard to the several forms of Transport Service, likely to come into mutual conflict? What method would you suggest for eliminating this possibility of conflict and securing a harmonious working of the various services under the different authorities?

(18) What room should be left, if any, to Private enterprise in the provision of Transport Services and under what conditions ?

(19) How far would it be desirable, in your opinion, to provide all Transport services as a public utility service, directly managed, and owned by the State or its representative, the Provincial, State or Local Governing Authority ?

(20) What general principles would you lay down for prescribing the country's policy governing rates and fares on the different forms of Transport Service, with due regard to the ability of the traffic to bear such charges, and their reaction upon the aggregate national economy? Could you illustrate your remark with reference to any peculiar feature of the Transport Service in your part of the country in relation to the local economy?

(21) How do you think it would be possible to secure the practical means for developing, improving or extending the various forms

of Transport Services, from what sources, and with what gurantee, if any?

(22) What is the amount of capital at present invested in the several forms of Transport Service? What extra capital would be needed for extending that service in all its forms, in accordance with the planned programme of National Development ?

(23) How far is it possible to co-ordinate Transport by Road with that by Rail or River, so as to provide the cheapest and the most efficient possible service appropriate to the several kinds of goods to be carried, without prejudicing the commercial position of any particular form of service ?

(24) What are the additional facilities specially needing to be developed for improving and extending Water Transport in this country, particularly in the shape of canalising the rivers for Navigation, developing Port or Terminal facilities at convenient centres on the principal rivers, "inter-nationalising" the main rivers flowing to more than one Province, so as to allow free traffic on such rivers, without interference from any other Government, than the one from which a service originates, or is owned and controlled; locks, docks, etc?

(25) To what extent is the development of coastal shipping a possible alternative to constructing or improving the existing Roads and Railways, in so far as the maritime provinces and states of India are concerned?

(26) What are the ways and means you would suggest for rendering all water transport service along the coasts of India, a practical commercial proposition?

(27) If the Transport service by the coastal waters is to be improved or extended and developed, what agency do you think should own that service including the ships, port equipment etc., engaged therein? If it is

private enterprise, what steps would you suggest for controlling and regulating the working of this enterprise in all respects?

(28) Are there any practices adopted or used by those who provide the shipping, or other forms of Transport Service, which prejudice the interests of the consumers or of the producers in this country? How would you suggest these practices (e.g. deferred rebate) be eliminated?

(29) What additional conveniences or services would you suggest the organised Transport Services of the country should be required to offer to make the service more attractive and popular (e.g. cheap workmen's tickets, season tickets, zone tickets, commercial coupons, bulk mileage, cheap education tours, hotels, Restaurants and refreshments etc.)

QUESTIONNAIRE ISSUED BY THE N. P. C., AS GIVEN IN THE RED BOOK I.

Qn. 91. What are the various available transport facilities within your province which are :—

(a) within the control of the Provincial Government,

(b) outside the control of the Provincial Government,

(c) within the control of local bodies within the province?

(92) How far are these existing means adequate for all the movement of men and goods in the province?

(93) What is the extent of road mileage, in respect of main trunk roads, provincial roads, and local by-ways in your province? Has there been prepared any programme for increasing this mileage, and distributing throughout the province, that mileage in such a manner as to provide an efficient supply of road service throughout the province?

(94) What are the handicaps in the way of increasing the road service within the province, and how does the Government of your province contemplate, if at all, to remove such handicaps?

(95) To what extent is your province interested in regard to water transport by river, coastwise, or overseas shipping, including building as well as operating ships?

(96) What are the facilities for an efficient water transport service in your province? How far are they developed? What room is there for their further development?

(97) How far is it possible to develop and increase these facilities by means of maintaining adequate channels, in the existing rivers, or making navigation canals from the rivers so as to inter link the river system; providing the necessary port and terminal facilities at central points on

the rivers, and other such devices suited for the adequate development of cheap, efficient inland water transport within the province?

(98) What is the extent of railway mileage in your Province of all gauges? Are there any supplementary tramways or light railways in your Province? How do the rates charged on the goods moved within the Province affect the development of Industry as well as market within the Province?

(99) Are there any Railway Workshops or plant making establishment in your Province? To what extent do they provide employment for local labour, capital, skill and experience?

(100) Have you had any occasion to make any representation on behalf of the Provincial or any commercial or industrial organisation within the Province in regard to

(a) policy and incidence of railway rates,

(b) employment in railway labour,

(c) development of outlying regions by means of cheap transport facilities. How far is there room for fostering such facilities in your Province?

(101) What is the cost of transport, by road, rail or water on these various means or forms of transport in the province as compared to one another? How has the cost of transport affected the development of industries in your Province?

(102) What means, agents, or organisations are there for controlling, in the public interest, the cost of transport or the rates, freights, fares, charged by the various agencies for the transport of passengers and goods? How should these be developed if they are lacking at present?

(103) What machinery would you provide to regulate as well as to secure speedy and effective settlement of disputes in regard to the rates, freights and fares or charges for the transport service, its efficiency and safety?

(104) Are there any industries in the province in relation to any of the means of transport, in the shape of the production and supply of the vehicles or their parts and accessories, including repairs: of the roads, bridges, including the material for the construction and maintenance of the roads, water-ways, rail roads, tramways, ships and air-way transport? Are there any ships built in your Province? If so, give clear idea as to the nature of the ships built and the extent of these building operations within your Province?

(105) What are the raw materials, and other facilities, e.g., draught animals, available within the province to provide the basis for the establishment therein of any industry connected with transport within the Province as described in the previous question such as the production and supply of automobiles, ships, air-planes, rail-road wagons and locomotives, carts or wheels, and other parts and accessories for the same?

(106) What are the handicaps in the way of establishing :—

(a) a ship-building industry in India sufficient to do all the water transport of goods or passengers on the rivers, along the coasts of India, or in regard to overseas intercourse; and to supply a Navy for India,

(b) a locomotive and railway rolling-stock making industry,

(c) automobile making industry, including all its parts, engines, accessories, as well as prompt and effective repair of the same,

(d) making and supply of aviation planes, airships, their parts, engines, and accessories?

What steps would you suggest for developing an Indian ship-building industry both for commercial and for defence purposes?

(107) What scope is there for developing adequate industries for the manufacture and supply of

the fuel, or motive power for the various means of transport within your province?

(108) What facilities are available for repairing and "Servicing" or supplying of parts and accessories of transport within your province? How far is it possible to develop these facilities so as to make the entire business of transport safe, adequate, economical, and efficient in working as a properly co-ordinated, rationalised, and modernised service for the entire province?

(109) To what extent would the province be prepared to help to organise or participate in an all-India enterprise, which would supply the materials, parts, accessories, or complete vehicles for the organisation of the entire road, water, and air transport as an Industry as well as a service?

(110) What are the industries dealing with the production of the means of communications already available in your province in regard to posts, telegraphs, telephones, radio and the like? To what extent is the manufacture and supply of the instruments, apparatus and accessories as well as their repairs necessary for these means of communications possible to establish and maintain within the province, or by means of a national central workshop for the manufacture and supply of all such instruments and apparatus? How far and in what way would your province be able to contribute for starting and working such an enterprise if one were decided upon?

(111) To what extent has the Government of your province associated themselves with any private enterprise in the interests of the general public, and for developing the industrial resources of the province including forests as well as mining, by means of cheap and efficient transport?

(112) How far do the rivers in your province, if any, give rise to problems of floods, erosion of banks, silting and shifting of the river-bed from time to time? What steps are taken by the Government of your province hitherto, and what new

steps are contemplated for solving of any of these?

(113) How far is it possible by Government enterprise to develop, organise, and co-ordinate all forms of transport, with a view to the most economical and efficient organisation and working of that service within the province?

(114) What are the agencies which to-day operate, or are in any way concerned with the various forms of transport within your province? How far is it possible to co-ordinate these various agencies into a collective or state-controlled enterprise, connected with the supply, or the transport service, or industries in connection with transportation vehicles, etc., so as to provide the most economical, efficient and co-ordinated service, for the transport of goods and passengers?

(115) (a) Are there any shipping companies owned, controlled and managed by Indians, plying their ships either in the rivers within your Province, or on the coasts of your Province, or in the overseas trade carried on between your Province and other countries!

(b) Do you consider the present share of the trade on the rivers, coast, or overseas catered for or obtained by the above companies sufficient from the view-point of the economic life of the Province, as well as from the economic and defence necessities of this country? If not, what are the difficulties that such Indian enterprise has to meet with in securing their proper share of the trade? What steps do you propose so that these difficulties may be overcome, and an adequate Indian merchant marine may be built up for India?

(SUMMARY OF REPLIES TO N. P. C. QUESTIONNAIRE RELATING TO TRANSPORT SERVICES, RECEIVED FROM THE VARIOUS GOVERNMENTS.)

BOMBAY :

Qn. 91. (a) Roads & Ferries. Tramways and Buses.

(b) Railways, Airways and Coastal traffic.

(c) Roads and Ferries. Trams and Buses regulated by Municipalities.

Qns. 95, 96 & 97. Great possibilities for the development of River Transport. Both Surat and Broach are situated on big rivers which could be made sufficiently navigable for big boats to come into the cities. There may be possibilities of making cross channels connecting the rivers which flow into the sea. The city of Ahmedabad could be linked up with the Bay of Cambay.

Qn. 98. The total mileage of railways in the Province of Bombay (excluding the Indian States) is 2506.566 miles made up as under :—

		Miles
Broad Gauge	..	1363.539
Metre Gauge	..	789.454
Narrow Gauge	..	353.573
Total		2506.566

Freight rates of railways are more in favour of export of raw materials rather than their internal consumption for industries. The rates are responsible for failure of many Provincial industries.

Qn. 99. No private workshops, but there are workshops for repairs and maintenance. They also make and assemble coaches. Labour employed mostly local. As regards capital, State finance in the case of the G.I.P. Rly., while in the case of company managed railways, the capital belongs mainly to non-Indians.

Qn. 102. No means of controlling the cost of transport in public interest. A Central Transport Rate Fixing Authority should be established, with local Committees in the Province to advise.

Qn. 104. Some important concerns which look after repairs and constructional work relating to transport service of the Provinces:

Railway workshops ;
Naval Dockyard ;
Mazagaon Docks ;
Richardson & Cruddas ;
Alcock and Ashdown.

Motor car bodies and waggons are built in this Province.

Ship-Building : Carried on, on the West Coast, specially in the Ratnagiri & Kanara Districts at the following places :

Surat District :	Narod, Billimoria, Kosamba (near Bulsar)
Thana District :	Chinchani, Pokran, Bassein, Vesava, Bhaynder, Mohul, Dahanu.
Ratnagiri Dist. :	Dabhol, Boria, Jaigad, Ratnagiri, Yavade, Ambre, Jaitapur, Vijiadurg, Danda, Amheri, Vadop, Malvan, Devgad, Achra, Nivati, Bedi.
Kanara Dist. :	Castle Rock, Gongavali, Tadri, Ankola, Honavar, Kumta, Sadashivgad, Velikeri, Kodar, Karvar.

The ship-building industry on a small scale is now conducted on modern lines in this Province by the following firms ::

1. Mazagaon Docks, Ltd.,
2. Messrs. Alcock Ashdown & Co.,
3. Messrs. John Ambosta & Sons,
4. G. D. Damnia, Esq.,

5. Jamshedji Phirozshah Wadia, Esq. (Bilimora),
6. Messrs. Surve Bros., Ratnagiri.

(The Royal Indian Navy Dockyard).

The maximum size of the launches or ships which can be constructed by these firms will not exceed 200 ft. in length and 800 tons in capacity.

MADRAS:

Qn. 91. (a) Motor Bus and Lorry traffic under the general control of a Central Road Traffic Board. Boat traffic and haulage by country carts drawn by bullocks and man. In the last two classes of services Government's control limited to the enforcement of traffic regulations.

(b) Railways, Steamships and Airways.

(c) Tramways and motor transport. The tramways in Madras owned by a private Corporation. Light Railways.

The number of motor vehicles in the Province as on 31-12-1938:

Motor cycles:	..	1215
Motor lorries	..	1586
Motor buses & Taxis	..	4059
Other motor cars	..	13,345

Minor ports in the Province within the control of Provincial Government, and major ports of Cochin. Vizag and Madras are within the control of the Government of India.

Qn. 95. Interested in all forms of water transport.

Calicut is the main port in the district of Malabar from which goods are shipped to and imported from other ports, foreign and coastal, by sea.

Mangalore is an outlet for Coorg and part of Mysore.

At Cocanada, sea-going sailing vessels of under 300 tons can be built for coastal trade.

Nagapatam is the chief port of the Tanjore District.

Coastal shipping to Ceylon.

The South Indian Railway Ferry Route is maintained from South India to Ceylon (Dhanushkodi-Talaimanar) by ferry steamers, carrying passengers and cargo.

Building & operating ships. Small country craft sailing. Vessels up to 40 tons are built at Negapatam for local port and coastal use. Country brigs are operated from Pamban. A dry dock for South Indian Railway ferry steamers is maintained at Mandapam in the Ramnad District.

The canal system of Madras engages 94,555 boats with a tonnage of 18 lakhs and ton mileage of 542 lakhs. The estimated value of cargo is 12.99 crores of rupees and the number of passengers carried 13.8 lakhs. Receipts total Rs. 516,570; and Maintenance Expenditure Rs. 456,232; leaving a net revenue of Rs. 60,338.

The number of ships engaged in foreign trade were as follows :

Year	Br. Ship.	Others :	Total:
1935-36	846	271	1,117
1936-37	821	281	1,102
1937-38	970	328	1,298

The number of steamers and coastal vessels touching at the main ports were as follows :

Port :	Steamers :	Sailors or crafts :	Total tonnage (000 tons)
Madras	708	—	2,541
Tuticorin	550	627	1,604
Calicut	646	1,145	1,207
Cochin	774	327	2,026

The coastline of Madras Province is about 1500 miles and it has 59 major and minor ports.

Qn. 96. Facilities for water transport:

		miles
1.	Godavari Canals ..	500 (abt.)
2.	Dummagudam Canal ..	2
3.	Godavari River ..	188
4.	Kistna Canals ..	400
5.	Buckingham Canal ..	258
6.	Vedaranyam Canal ..	35
7.	K. C. Canal ..	73
8.	West Coast Canals & connecting backwaters ..	400

Not much scope for improving 1 to 7 items. Proposals in hand to improve item 8, but no definite decision has been taken. The facilities for an efficient water transport service in the Province consist in the proper maintenance of the bar, channel, Wharves and the provision of efficient lights. It is also necessary that signal stations should be provided for at every port for communicating messages from ship to shore and vice versa.

Qn. 97. Possible to develop and increase transport facilities by widening and deepening the canal system and approaches to ports and having power driven craft for the transport of goods. The maintenance of channels outside the port limits and interlinking with the river system will involve heavy expenditure, which will not be incommensurate with the benefits likely to be derived.

Water transport is slow and most rivers run dry in hot weather. The scope for their effective service is therefore limited. A few ports of the Province are fit for anchorage of steamers. There is therefore room for the improvement of minor ports and increasing the scope of the coastal traffic.

Qn. 98 :

Name :	Broad Gauge	Metre Gauge	Others	Total
Madras & S.M.R.:	1,136	1,013	—	2,149
S. I. Rly :	603	1,656	99	2,358
B. N. Rly :	241	—	—	241
N. S. Rly :	—	35	—	35

A light railway from Tiruchandur to Thisayanvadi in Tinnevelly district—a short distance —owned by a private company.

The railway classification of commodities is rather inelastic and stands in the way of freer movement of commodities like cotton.

Qn. 99. 22 railway workshops and repairing sheds in addition to two railway signal workshops. Employs 12,107 persons. The two chief workshops are those of the Madras & S.M.R. Co. Ltd., Perambur, and the South Indian Railway Co., Ltd., Trichinopoly which employs 4,795 and 3688 workers respectively.

The workshop of the Madras Electric Tramways Co., Ltd., employs 365 workers in Madras.

Qn. 101 : Transport by Sea is the cheapest. The charge on goods by railways varies with commodities and ranges from 0.38 per maund per mile upto 1.87 pie per mile per maund. Railways also quote station to station rates and scheduled rates in wagon loads.

Over short distances lorries generally quote cheaper rates. Canal rates are very cheap and sometimes stand as low as the minimum rate chargeable on railways, viz., 0.10 pie per maund per mile but their sphere of competition is limited.

Qn. 102 : The Road Traffic Boards constituted under the Madras Motor Vehicles Rules 1938, have been empowered to fix the maximum fares that may be levied by public transport vehicles.

Qn. 104 : Wooden sea-going sailing vessels under 300 tons burthen are built occasionally for coastal trade. Small country crafts, sailing vessels upto

40 tons are built. Cargo boats of about 50 tons and below are constructed at Calicut. Messrs. Brunton & Co., Ltd., Cochin have built and are still building motor launches, tugs, rowing boats, barges and sailing boats.

22 Railway workshops and repairing shops, in addition to two railway signal workshops. The Madras Electric Tramways Co., Ltd., maintain a workshop in Madras. There are 16 coach building and motor building works included in the list of large Industrial Establishments coming under the operation of the Indian Factories Act.

A number of general engineering works and industrial schools.

BENGAL :

Qn. 91 : (a) Roads and Rivers.

(b) Railways.

(c) Roads.

Qns. 95, 96 & 97 : The Province has got an excellent riverine transport service for which there are boats and steamers which regularly ply. It has got sea coasts but ocean going steamers are seldom used for the transport of goods and passengers.

Country boats are manufactured in some places and large boats which some time ply the sea coasts are also manufactured where there is an approach of the sea.

Facilities for an efficient water transport curtailed owing to silting up of rivers at many places.

If the government makes it its business to take sufficient care of the river system of the Province, it would be possible to develop and increase those possibilities by maintaining adequate channels in the existing river or making navigation canals from the rivers interlinking the river system and providing ports and facilities at certain points on the rivers.

The aggregate length of canals, canalised rivers and channels open to navigation is about 1184 miles inclusive of the Sunderbans steamer route.

Qn. 98 : Class I (with gross earning of Rs. 50 lakhs and over)

Assam Bengal ;

Bengal & North Western ;

Bengal Nagpur ;

Eastern Bengal ;

East Indian.

Many of these Railways operate partly in Bengal and the exact mileage within the province is difficult to arrive at.

Class II (with gross earnings less than 50 lakhs but more than 10 lakhs)

Bengal Dooars	..	156.20 miles
Bengal Himalayan	..	146.51 ,,

Class III (with gross earnings less than 10 lakhs)

Bankura-Damodar River	..	59.95 miles
Barasat-Basirhat Light	..	52.24 ,,
Bengal Provincial	..	41.58 ,,
Burdwan-Katwa	..	32.47 ,,
Dehri-Rotahs	..	23.83 ,,
Howrah-Amta	..	43.87 ,,
Howrah-Sheakhlala Light	..	19.75 ,,
Jessore-Jhenidah	..	36.75 ,,
Kalighat-Falta	..	26.25 ,,

Railways offer specially favourable rates for large consignments and long hauls. In connection with the demands of the export trade, produce and raw materials have moved in large quantities to ports like Calcutta & Bombay. This has led to development of industries at ports.

Rates unfavourable to industrial growth.

UNITED PROVINCES:

Qn. 91: (a) Motor Transport, Roads, Rivers.

(b) Railways including light railways and aviation.

(c) Bullock carts, hand carts, pack animals, tongas, & ekkas—under no one's control. Roads under the control of local bodies.

Qns. 95, 96 & 97: With the single exception of the Gogra river and the Ganges below Allahabad, the rivers of the Province do not lend themselves to water transport. The upper Ganges Canal, the Lower Ganges Canal and the Agra Canal were all originally designed to serve the dual purpose of irrigation and navigation canals. With the increase of railway communications, inland water transport despite the very low rates charged, languished and with the increase in motor transport, inland navigation is moribund.

Navigation on the Upper & Lower Ganges Canal is now confined to the following reaches:

(a) Lower Ganges Canal: (i) Main line, Head to Mile 34; (ii) Cawnpore Branch Mile 70 (Kanusa) to mile 135.

(b) Upper Ganges Canal Head to Mile 87.

There is very little scope for any appreciable extension of navigation along the canals of the U.P. because of the fact that the whole province is traversed by a vast net-work of railways and rapid development of motor transport.

River Navigation in U. P.

The main rivers are the Ganges, the Jamuna, the Gumti and the Gogra. During the whole period from about October till April, the entire supplies flowing in the Ganges, the Jamuna and the Sarda are diverted, at the various headworks into the canals for irrigation and for all navigation purpose are dry—at least as far as they lie in the Central & Western parts of the province in which

are concentrated the industrial and commercial centres. Supplies in the Gumti and the Gogra are not liable to such violent fluctuations but unfortunately the Gumti only rises in the Pilibhit District & the Gogra flows through the Terai and semi-terai belts for most of its length. Neither of these rivers traverses any industrial or commercial areas which could take advantage of any navigational facilities that they might provide.

Lesser rivers of the Province are not suitable for navigation because they are dry in some parts and also in cold weather.

Another difficulty is the instability of beds of large rivers.

Qn. 98. Railway mileage 5875.688 miles. Following supplementary private light railways and tramways intended to carry goods of the owners only and are exclusively or largely used for the transport of sugarcane to sugar factories :—

1. Tramway in Gorakhpur Division;
2 Light Railway at Banbassa for the headworks of the Sarda Canal;
3. Light Railway in connection with the Ramganga Hydro-Electric scheme;
4. Railway Line from Banbassa to Jagbura;
5. Daurala Sugarcane tramway;
6. Umri-Dhampur-Sharkot tramway;
7. Tramway in the Haldwani Forest Division.

Qn. 99. 8. Workshops.

E. I. Rly. Workshop at Lucknow; Bengal & North Western Railway Workshop at Gorakhpur; Rohilkhand & Kumaun Railway Workshop at Izatnagar, Bareilly. Employ local labour, skill and experience.

Qn. 102 Provincial government have set up the Board of Traffic and Communications, U. P. and the Divisional Controlling authorities at the head-

quarters of each Division to control the cost of motor transport in the Province, in their respective districts. As regards Railways there exists a Railway Rates Tribunal which has been constituted by the Government of India.

Qn. 104 Tongas, and ekkas, bullock carts and hand carts made locally. Repairs to motor cars carried on.

PUNJAB :

Qn. 91. (a) Roads;

(b) Railways, water transport and roads.

(c) Roads.

Qn. 95, 96 & 97. Only timber is sent down from the Punjab and Kashmere forests in its rivers to the plains. Some quantities of Cereals and other agricultural produce is transported by boats over short distances.

Qn. 98. No tramways. Only one light railway, viz., Jagadhri Light Railway which connects Jagadhri N.W.R. station with Jagadhri town—a distance of about 5 miles.

The freight rates on the movement of goods within the province are generally higher than the rates charged on the movement of goods from the ports to inland towns. The rates fixed by N. W. R. are on the basis of maximum rates fixed by Indian Railway Conference Association.

Total Mileage—6,946.

Qn. 99 Eight North Western Workshops—one at Ambala, one at Jullunder, four at Lahore, one at Jelum and one at Hissar. These employ 9,618 operatives in 1938. Majority of employees are Punjabees. The capital is all owned by the Indian State Railways. They carry on the construction of wagons and carriages and do repairs to all sorts of rolling stock.

Qn. 101. For short distances where metalled roads do not exist, transport by means of boats and bullock driven **gaddas** is cheap and convenient. Lorry

rates are somewhat lower than railway freight rates but these rates are too high to facilitate development of industries.

Qn 102. The N. W. R. have constituted two Advisory Committees (one at Lahore and one at Karachi) but the committees should be vested with some real measure of power and its functions should not be confined to a purely advisory nature.

Qn. 104. N. W. R. Workshops construct carriages and waggons and repair the rolling stock. Other industries are the construction of motor buses bodies and of **Gaddas** and boats. Private foundries produce some of the spare parts and automobile accessories and carry out all sorts of repairs to automobiles. One concern has recently started the manufacture of road dressing materials.

BIHAR :

Qn. 91 (a) Motor transport;
(b) Railways;
(c) Bullock carts, ekkas and similar vehicles.

Qns. 95, 96 & 97. Patna and Arrah canals provide inland water transport and the river Ganges is an important line of communication between U. P. on the West, and Bengal, Assam and the Sea on the East.

Water Transport is essentially slow and consequently not very popular although cargo and passenger steamers ply from Benares through Patna to Calcutta.

		Major Rly.	Light Rly.
Qn. 98.	Railway Mileage	3,548.155	150.7

No complaint about charges.

Qn. 99. A workshop at Jamalpur for the E. I. Rly.

Qn. 104. The Kumardhubi Engineering Works, Messrs. Tata Iron & Steel Works, Messrs. Arthur Butler & Co., can handle the steel requirements of the province for bridges, light steel structures etc. Country boats are built in the province to some extent.

C. P. & BERAR:

		Class I. (metalled)	Class II & III (unmetalled)
Qn. 91.	(a) Roads	5,203 miles	1,994 miles
	(b) Railways	2,501 „	
	(c) Roads	317 „	1,195 „
Qn. 98.	All gauges	2,501 „	
Qn. 99.	7 Railway Workshops.		

SIND:

Qn. 91. (a) Roads
(b) Railways, Steamships
(c) Roads.

Qns. 95, 96 & 97. River traffic considerably reduced due to the construction of Sukkur Barrage. The main traffic is from Punjab to Sukkur. Much reduced traffic from Sukkur to Hyderabad & Kotri and from Son Miani to Karachi. No scope for development of river traffic which has already been replaced by road traffic.

ASSAM:

Qn. 91. (a) Regulation of motor vehicles;
(b) Railways and Steamship Cos.

BARODA:

Qn. 91. Railways managed by the State and private Agencies. Motor bus services licensed by States.

	Miles	Narrow gauge.	Meter gauge.	Broad gauge.
Qn. 98. Owned by the State	723	(355.73;	345.89;	21.42)
„ „ Foreign Rlys.	232			
Total within the State.	955			

No tramways or light railways. The rates are adjusted from time to time in the way the commodities can bear and render its free movement by rail.

Qn. 99. A Railway workshop at Goya Gate. Employs 400 to 500 workmen, 80 per cent of them are local.

Qn. 101. Average cost per mile for transport of passengers and carriage of goods by rail :—

Passenger.	Narrow gauge.	Meter gauge.
I. Class	24 pies	23.6 pies
II „	9 „	11.7 „
III „	4.87 „	3.75 „

GOODS :

Narrow gauge :—18.5 pies for carrying one ton of goods.

Meter gauge :—12.8 pies for carrying one ton of goods.

Cost of transport has not affected the development of trade as far as Railway is concerned.

Cost of transport by road is almost the same.

COCHIN :

Qn. 91. Railways, motor roads, waterways and inland canals controlled by State.

Road Mileage

Source: Statistical Abstracts 1936-37.

Province	Roads maintained by P. W. D.		Roads maintained by Local authorities. Municipalities including Cantonments, notified areas and townships.		District & Local Boards.		Total length of all roads.	
	M.	UM.	M.	U.M.	M.	U.M.	M.	UM.
Madras	630	577	1781	961	22665	12779	25,085	14,317
Bombay	6244	645	1133	874	3764	9404	11,141	10,923
Sind	226	463	273	86	95	11052	594	11,601
Bengal	965	725	1487	1593	3078	87497	5,530	89,815
U. P.	3419	785	2152	1483	4628	22720	10,199	24,988
Punjab	2879	1773	1064 (c)	697 (c)	1467	17844	5,410	20,314
Shan States Federation	680	1489	41	16	76	2511	797	4,016
Bihar	949	298	605	676	2514	25931	4,068	26,905
Orissa	945	506	154	101	1057	2034	2,156	2,641
C. P. & Berar	5072	2067	622	425	311	1208	6005	3,700
Assam	626	1878	181 (a)	122 (a)	106	5832	913	7,832
N. W. F. P.	1269	906	140 (d)	170 (d)	19	1461	1428	2,537
Baluchistan	2618	27	36	7	3	4810	2657	4,844
Ajmer-Merwara	284	93	58	23	78	81	420	197
Coorg	277	105	3	21	—	729	280	855
Delhi	296	—	286	32	1	100	583	133
Total	27388	12337	10016	7287	39862	205993	77,266	225,617

(a) Excludes Roads in Cantonment.

(b) Including Abu area.

(c) Including 202 & 161 miles respectively maintained by the Military Engineering Service.

(d) Includes 5 & 150 miles respectively maintained by the Military Engineering Serivce.

ROAD MILEAGE:

Province	Authority Maintaining the Roads										Total (3)		Total of (4)
	P. W. D. (Government)												M. & U. M.
	Main Trunk Roads.		Provincial Roads.		Local by-ways.		Total (1)		Local bodies & Municipalties.		P. W. D. & Local Bodies.		P. W. D.& Local Bodies
	M.	U.M.	M.	U.M.	M.	U.M.	M.	U.M.	M.	U.M.	M.	U.M.	
Bombay	—	—	—	—	—	—	6326	581	4929.93	9754.33	11256	10335	21591
C.P. & Berar	993	—	4210	1914	—	—	5203	1194	317	1195	5520	2389	7909
Bihar	—	—	949	80	—	—	949	80	2437*	25047*	3386	25127	28513
U. P.	589	—	2782	—	4374	—	7745	13600	—	—	7745	13600	21345
Bengal	—	—	—	—	—	—	926	725	2563	35094	3489	36819	40308
Punjab	—	—	5714	1778	—	—	5714	1778	—	—	5714	1778	6432
Madras £	—	—	—	—	—	—	643	581	24446	13744	25089	14225	39314

* Excluding Municipalities.

£ Excluding Corporation of Madras.

Summary Of Developments

In no sector of the national economy of this country have the changes brought about during the six years of the War been so considerable as in regard to Transport, including both the Transport Service, and the Industries connected with its equipment and operation. In the pages that follow an attempt is made to summarise the different changes in the several modes of transport by road, water (inland as well as coastal and overseas) and air. The Summary will deal both with the modern mechanised, and the earlier primitive, forms of transport.

A good deal has been said in the Introduction, however, to bring the tale in each case up-to-date, in order to preserve the continuity of the narrative. In this section, therefore, note will be taken only of such of the more considerable developments as have affected the country's Transport System more radically, as in the case of road transport by automobile; and in overseas Transport by Government intervention in operating the service as a part collective enterprise.

I. Road Transport, by human, animal or mechanical energy.

The existing Road System of India includes four great trunk roads, stretching diagonally across the country. They measure 5,000 miles, and form a framework linking most of the important centres of population, industry, or trade, as well as strategic points, and subsidiary roads. None of these roads is, however, an all-weather trunk line according to modern standards, lacking bridges, proper surfacing, suitable width, and adequate equipment in the shape of petrol stations, rest houses, repair shops, garages etc. The subsidiary road mileage is 95,000, the best and most considerable of which is to be found in the Southern Provinces. The desert regions of Rajputana, Sind, and parts of the Punjab, and the crowded plains of Orissa, Bengal and Gujarat are the worst served. Besides these surfaced roads, there is a very large mileage of "kutcha" roads, amounting approximately to 201,000 miles. Some of these are motorable during the fair weather. But, taking the country as a whole, the heavy internal commerce and large population on the verge of destitution, the road facilities for modern mechanised, as well as the primitive forms of transport are very limited.

The use of the road by human or animal traction has not undergone any considerable change,—unless the cycle rickshaw found in some cities is taken into account. And even that is being mechanised. Thanks to the absence of good roads, properly bridged and surfaced, and sufficient to link up 5,00,000 odd villages of India, modern mechanised means of transportation cannot use them. The more primitive forms of that service still continue to hold their own,—at least in the countryside. Even in large centres of modern industry, the horse carriage for passenger conveyance, and the bullock cart for goods, are not quite extinct, though rapidly disappearing.

The increasing realisation of the need for better, quicker, more permanent road transport service led to the appointment of the Road Development Committee in 1927 to examine the possibility of road development in view of the increasing use of motor transport, and suggest ways and means of financing it. Government carefully considered their recommendations and resolved to increase the import and excise duty on petrol from four to six annas per gallon and that the proceeds of the additional duty should be allotted as a block grant for expenditure on road development. A separate Road Development Account was created for this purpose to which these grants were credited and the unexpended balance in this account was not to lapse at the end of each financial year. The Account or Fund is devoted, after retaining 15 per cent for administration, research and special grants-in-aid, to road construction and improvement, including bridges, in the different Provinces, and States, in the ratio of the petrol consumption in each of those units, but not on interest and amortization charges on road loans sanctioned by Government and administration of Provincial Boards of Communications and establishment connected with the control of motor transport.

With the levy of a surcharge on petrol, the share of the petrol duty available for the Road Fund was increased from 2 annas to 2½ annas per gallon from October 1, 1931. Upto the end of March 1944, the Fund had received from this source about Rs. 21 crores. After transferring nearly Rs. 4 crores to the Reserve, the sum available for distribution to the Provinces, States and Minor Administrations was Rs. 16 crores after excluding Burma's share. By the end of 1943-44 the provinces received Rs. 12.9 crores to sup-

plement the normal outlay by them from their own resources, and the Minor Administrations received Rs. 67½ lakhs. The ten years following the introduction of the Fund were, however, marked by acute financial stringency, so that Provincial Governments and local bodies were obliged to make drastic reduction in their allotments for roads from their own revenues. The result was to starve the construction and development of feeder roads. The Road Fund was used exclusively for roads of interprovincial and interdistrict importance. The Central Government did not like this, and so they required at least 25 per cent. of the provincial shares in the Road Fund to be used on developing local Feeder Roads, and not more than 25 per cent. be used on roads which compete with the Railways.

The total expenditure on roads in 1938-39, amounted to Rs. 602.1 lakhs in the Governors' Provinces, which was Rs. 41.7 lakhs less than in 1928|29. The total Central and Provincial revenue from motor transport has steadily increased. In 1938-39 it was 960 lakhs or an increase of Rs. 358 lakhs over the total road expenditure in the year.

Road Administration

In administrative organisation, roads are a provincial subject. They may be divided into two main classes, Provincial Roads under the local Public Works Department, and Local Roads in charge of Municipalities and District Boards. The extent to which the administration of roads has been delegated to local bodies varies considerably from province to province. In British India as a whole about 85 per cent. of the extra-municipal mileage is under the charge of District Boards. Out of the 226,123 miles of roads in what was British India, in 1943 about 77 per cent. or 178,008 miles were maintained by local bodies, while the Provincial Governments and Municipalities maintained 48,115 miles.

The total mileage of roads with modern surface, bituminous or cement,—was 15,121 and the total mileage of waterbound macadam roads was 79,933, or a combined total of 95,054 miles. In addition there were lower types of roads aggregating 201,414, with artificially admixed granular material, gravel, moorum, etc. on natural soil; or secondly, roads of natural soil which are motorable in fair weather; and thirdly, roads of natural soil which are unmotorable. The total mileage of motorable roads was

221,690 miles, out of which 126,374 miles were motorable throughout the year, and the remaining 95,316 miles motorable in fair weather.

The Effect of the War on the Indian Road System.

The War forced the authorities to take in hand works of road improvement to facilitate the operation of motor transport for military requirements. At the same time the cost of works, both in respect of road construction and maintenance, had risen through the general increase in price level. Road revenue, on the other hand, kept low because of petrol rationing. In the year ending 31st March 1945, however, the total revenue from motor transport was over Rs. 11 crores in British India and the total road expenditure was less than Rs. 10 crores.

Statement No. I showing the position of the Central Road Fund as at the end of the year 1945-1946.

Gross Receipts	Rs. lakhs	Rs. lakhs
(1) to end of the year 1944-1945		2278.65
(2) for the year 1945-46		
(i) Actual revenue	283.57	
(ii) Miscellaneous recoveries	0.02	283.59
		2562.24
Deduct grants for Civil Aviation		31.33
Net credits to the Road Fund		2530.91
Deduct credits to the Road Fund Reserve		483.63
Balance available for allocations		2047.28

* The details are given on p. 220.

Sums allocated to :

	Rs. lakhs	Rs. lakhs
(a) Governors' Provinces (including Rs. 80.60 lakhs allocated to Burma prior to separation)	1560.80	
(b) Chief Commissioners' Provinces	54.13	
(c) Indian States, Administered Areas in States, N.W.F.P. Tribal Areas	227.31	1845.24
Balance (representing mainly the unallocated revenue for 1945-46 received after the close of the year).		205.04

	Rs. (lakhs)
*(a) Additional taxation on petrol	1909,16,650
(b) Contribution from Burma and Assam Oil Companies during 1929-30	9,38,876
(c) Contribution from the surplus general revenue during 1934-35	40,00,000
(d) Special grants from general revenues for the Multan-Rohri-Quetta road project during 1941-42 and 1943-44	83,00,000
(e) Contribution from the Defence Estimates to set off the effects of the refund to those estimates of the Customs duty levied on petrol consumed by the Defence Services	217,00,000
(f) Contribution from the Punjab Govt. towards the cost of strategic works of road development	20,00,000
(g) Miscellaneous Recoveries	9,676
Total	22,78,65,202

Allocations made from the Central Road Fund and expenditure incurred therefrom.

Name of Provinces or Administration	Cost of schemes approved to date against Provincial allocations	Allocations	Expenditure reported	Unspent balance	Probable allocations
Total	Rs. lakhs	Rs. lakhs	Rs. lakhs	Rs. lakhs	Rs. lakhs
Governor's Provinces					
1943-44	1,279,86	1,289.83	1,079.99	209.84	83.86
1944-45	1,333.75	1,279.70 .73*	1,154.57	136.86	115.12
1945-1946	—	—	—	—	—
1946-47	1,440.72	1,365.11	1,255.53	109.58	118.32
Centrally Administered Areas					
1943-1944	47.15	67.50	44.99	22.51	6.64
1944-1945	45.96	67.50	45.61	21.89	8.74
1945-1946	—	—	—	—	—
1946-1947	58.54	71.89	51.43	20.46	4.03
Grand Total					
1943-1944	—	—	—	—	—
1944-1945	1,379.71	1,358.93	1,200.18	158.75	123.86
1945-1946	—	—	—	—	—
1946-1947	1,500.87	1,437.00	1,306.96	130.04	122.35

The Reconstruction Committee of Council on planning and reconstruction made recommendations regarding co-ordination of road and rail traffic in a common national service which are summarised below :—

* Advance allocations to meet excess expenditure will be adjusted against future allocation.

For the proper development of the country, the road and rail transportation system must be planned and developed as a correlated whole. For this purpose it is desirable that a Central coordinating authority should be set up by mutual consent, having a voice in framing the policy and in the regulation of road transport. The federal units must, of course, be consulted in the alignment of roads and railways in their respective jurisdiction.

Roads and railways should be developed as integral part of a coordinated transport system. For this purpose each means of transport should be allocated its appropriate part; and the over-development of one to the prejudice of the other should be prevented.

In order to prevent duplication and waste of public money, and in the interest of public service, existing railway bridges should be decked to cater for road traffic, and new bridges should combine road and rail tracks wherever possible.

For uniform and coordinated development, roads should be classified as National Highways, planned by the Centre in consultation with the units, and based on national considerations including Defence; Provincial roads, District roads and Village roads.

The National Highways should link Provincial capitals and the strategic points on the frontiers. The Centre, should direct, through the Central Road Boards, control over traffic on these Highways and be responsible for their maintenance and development.

The other three classes of roads must be developed by the Provinces, under Central control, and with particular reference to marketing and linking up villages. The Centre should also be responsible for the designing and sitting of major bridges and for giving technical advice on the construction of all bridges.

For road development, skilled labour and technical personnel from the army should be kept on as complete units on demobilisation and re-employed on a cooperative basis. Workshops established for road machinery maintenance used during the war by the army should be continued, to recondition surplus machinery before disposal.

All Road making machinery, plant and materials required for road construction and maintenance should be produced in India.

Motor transport should get into the heart of the countryside, to prevent undue overcrowding and competition on the better developed routes. It should be used more than hitherto by Governments for administrative and "development" purposes.

Maximum amalgamation of road transport concerns operating main routes, and controlled monopolies on light traffic routes, should be encouraged, for passenger motor transport, with close cooperation from railways. The Committee considered there was no advantage in State ownership of motor transport divorced from railways. Minimum fare for both road and rail should be established, stabilised by agreement. Uneconomic road rail competition for heavy or long-distance traffic should be prevented except where long-distance Road Transport is judged by experts to be in public interest. Motor transport is unlikely to be economical. Central regulation is necessary in such cases to combine speed, safety and economy, for marketing crops and supplying ordinary village needs. But it can advantageously assist special agricultural products e.g. market gardening and fruit growing.

Motor vehicle taxation should be uniform. There should be reciprocal arrangements to obviate double taxation. Use of pneumatic tyred carts should be encouraged. The carts and tyres should be manufactured in India. The development of alternative fuels, such as producer gas and alcohol mixed with petrol, should be encouraged. Large-scale and systematic enterprise has begun in this regard. The Committee were emphatic in their recommendation that, to plan for the future, to give effect to the policy enumerated above, and to regulate the development of roads and road transport as part of the country's general transport system, there should be a strong Central Road Board. Roads and road transport should be dealt with in the same Department, and all forms of Transport should be under one Member of Council.

Road Development.

Recommendations for a ten-year plan of post-war road development, estimated to cost Rs. 450 crores, are contained in a report of the Conference of Provincial & State Chief Engineers held at Nagpur in December 1943. Roads are a Provincial subject but this conference stressed that Central direction and coordination was necessary for systematic development on an all-India basis.

The Central Government have, with the approval of the Transport Advisory Council, accepted the following proposals as the basis of their 5-year plans for roads :—

1. The Centre shall, subject to certain conditions, assume full financial liability, from April, 1947, for the construction and maintenance of all National Highways.
2. A Central Road Research Institute should be set up by the Council of Scientific & Industrial Research at an estimated cost of Rs. 8 lakhs for capital works, and Rs. 10 lakhs for recurring expenditure in the first 5 years for major problems of Road construction and maintenance.
3. Development of roads other than National Highways in the Chief Commissioner's Provinces excluding the Andaman and Nicobar islands will cost about Rs. 2 crores for capital works and Rs. 20 lakhs for maintenance in 5 years.
4. Apart from the Central expenditure on National Highways the Provinces will get Central subventions for their own five-year plans.

Road Transport.

The Interim Government declared its Road Transport Policy in October 1946 as follows :—

i. They recognised the necessity for rail-road co-ordination to avoid a wasteful competition, protect Government finances, and provide more efficient and coordinated Transport Service for public benefit.

ii. They consider that in most, if not all, Provinces this can best be achieved, so far as passenger transport is concerned, by the formation of tripartite companies.

iii. If any Provincial Government does not favour the formation of tripartite companies, but wishes to form some other road transport organisation, and such a scheme provides for substantial financial participation by the Railways, the Central Government, will not object to Railways participating but would insist on an equitable adjustment of the existing operator's rights.

The Provincial Governments were asked, after the formation of Ministries, whether they would be able to accept the broad principles of the scheme set out in the White Paper. The details of Government's policy will be subject to modification in the light of the views expressed by Provincial Governments.

As regards goods transport, the general policy accepted by a majority of the Provinces, is to reserve long-distance traffic for the Railways, and to allow road transport to cater for short distance and door-to-door traffic.

The Latest Announcement of Government Policy on Roads.

The Constituent Assembly (Legislative) resolved on November 19, 1947, to continue the extra customs as well as Excise duty on motor spirit of not less than 2 annas per gallon, and the proceeds of these duties to be applied for the purposes of road development. Out of the proceeds of such extra duty in any financial year a sum equivalent to the share in such proceeds arising from taxed motor spirit used in aviation during the calendar year ending in the financial year concerned shall be deducted and kept at the disposal of the Central Government to be allotted as grants-in-aid for civil aviation. The balance will be credited to a separate Road Fund.

The Road Fund thus formed is to be used, as to fifteen per cent, by the Central Government as a reserve. From the remainder a portion will be allotted by the Central Government for expenditure in each Governor's Provinces, Chief Commissioner's Provinces, the Acceding States and in such non-acceding States as may be eligible thereto under any agreement, each in the ratio of the consumption of taxed motor spirit, (except that used in aviation), in each area to the total consumption in all India during the calendar year ended in the financial year concerned.

The portions so allocated to Provinces will be retained by the Central Government until they are actually required for prescribed expenditure. If the Central Government consider any Province fails to take the steps recommended by the Central Government for the regulation and control of motor vehicles, or delayed application of any portion of the Road Fund allocated to it for expenditure on its roads, the Central Government may resume the whole or part of any such unexpended sums held on account of that province.

The sums thus resumed must be reallocated between accounts of Provincial Governments and the Central Reserve in the ratio of the main allocations for the preceding financial year. The balance to the credit of the Road Fund or of any allocation will not lapse at the end of the financial year. The Central reserve is to be applied, first, to defray the cost of administering the Road Fund, and thereafter;

upon such schemes for research, intelligence and special enquiries connected with roads, and

finally upon special grants-in-aid for such objects connected with roads as the Central Government approves.

Similarly the Provincial allocations are, subject to the previous approval of the Central Government, to be used on

(i) construction of new roads and bridges,

(ii) reconstruction or substantial improvement of existing roads and bridges,

(iii) maintenance of roads and bridges in special cases, constructed, reconstructed or improved from the Road Fund, or from loans approved or sanctioned by the Centre,

(iv) to meet establishment and other charges connected with the preparation of schemes of road development, or administration of provincial Boards of Communications, and the control of motor transport; and

(v) on Interest and Amortization of loans approved or sanctioned before 19th. November, 1947 by the Central Government, and spent or to be spent on the construction, reconstruction or improvement of roads and bridges.

While approving proposals for construction, reconstruction or improvements of roads and bridges from the Road Fund, the Centre must have regard to the present urgent need for improving the efficiency and reducing the cost of transport by road of agricultural produce to markets and railways.

The Resolution also establishes a Standing Committee for Roads with the appropriate Minister or his nominee, as Chairman; twelve members elected by the Constituent Assembly from among its members and the Chief Commissioner of Railways.

All proposals for expenditure from the Central reserve and all other proposals for expenditure from the Road Fund to be made in the Provinces shall be referred by the Central Government to the Standing Committee before the proposals are approved; and no such proposal can be approved unless a majority of this Committee has approved it.

The functions of the Standing Committee are :—

(a) To consider the annual budget and accounts of the Road Fund;

(b) To advise upon all proposals for expenditure from the Central reserve;

(c) To advise upon other proposals involving expenditure from that Fund;

(d) To advise upon proposals for the resumption of monies held on any Province's account;

(e) To advise the Central Government generally on all questions relating to roads and road traffic which the Central Government may refer to the Committee.

Conclusion.

It may be added that the developments outlined above were planned to meet the needs of mechanised Transport. Mention has, no doubt, been made of the ordinary village cart; and the costliness of motor transport for the average Indian farmer has also been noticed. For a country of the size and peculiar conditions of India, with her lakhs of villages, these arrangements may not suffice to penetrate the mountain side, the terai and the forest. As remarked in another volume in this Series, the backwardness of Forest Development in India is mainly due to lack of suitable transport. Subsidiary roads or pathways would be needed to link up every hamlet in the country with its fellows, and with central points. Animal and human transport is, therefore, very likely to continue side by side with mechanised transport in these areas for years to come, until an adequate system of ropeways, tramways and railways are developed to serve these regions and to develop their vast potentialities.

II. Railway Transportation.

The War had already broken out when the Transport Sub-Committee submitted their Interim Report, giving considerable space to the problems of railroad transportation

under planned economy in a country like India. So far as the allocation or distribution of the available goods and passenger traffic was concerned, the main problem at that time claiming public attention was the Rail-Road competition. The six years that followed were the most fruitful in changes and developments in the Railway branch of the Transport Service. The growth of traffic was so rapid and large that every means of Transport was severely strained. Problems like Rail-road competition went into the background; and new questions arose which made the Transport Service and its equipment the source of serious anxiety.

The War and its exigencies made an increasing demand upon the principal form, viz. the Railway Transport System, both for the movement of troops and military stores, as well as of goods and raw materials needed for making up into munitions of war, or feeding the industries. Alternative means, equally efficient were unavailable. That portion of the traffic which used, before the War, to be carried along the coast in modern steam or primitive sailing vessels, had to be diverted to the railways, not only to secure rapidity of carriage, but also because of the dangers of sea-transport in the days when the Submarine was operating ruthlessly. Some of the waters even along the coasts of this as well as other countries were mined, and so made more dangerous for traffic purposes. Available shipping space, moreover, had to be diverted to the carriage of troops and munitions to and from the various theatres of war. The result was that shipping space by sea for ordinary freight came to be rapidly and progressively diminished. That inevitably added to the strain upon the railways.

So far as Roads were concerned, the alternative of automobile transport was equally unavailable. Every year of the continuation of hostilities added to the shortage of vehicles, of petrol supplies and of other motor fuel parts and accessories,—all imported from abroad. Such vehicles etc. as were available were required for the use of the mechanised armies at War; and so the shortage for the normal use became progressively more acute. That portion of the traffic, therefore, which used to be carried by road in modern mechanised vehicles also came to the Railways.

The primitive forms of road transport, in the shape of carts or animal conveyance remained in operation; but

they too, suffered owing to the increased demand for transportation for war purposes. Railways were more burdened in proportion as animals and porters were taken up more and more for war service. The aggregate production in the country was also increased; and more movement was taking place of passengers in connection with war activities of Government, as also because of the increase in numbers.

All these factors worked cumulatively, and were intensified in their effect by the fact that the demand for the necessary parts and accessories, needed for the actual conduct of hostilities, was impossible to be met from the usual foreign sources of supply. This meant that domestic production of corresponding articles had to be proportionately increased; and its transportation to the point where it was required, added to the strain upon the Railways. In proportion that indigenous industry was directly ministering to war requirements or incidental, the same phenomenon showed itself in fields not directly connected with the War. The war-time development of all industries, moreover, led to concentration of ever increasing working population, where the factories and workshops employing them were centred. As this was, at least in the beginning, temporary or casual labour, its movement from the place of employment to the home was much more considerable and frequent,—yet another source of increasing pressure upon the rail-road service. All these factors made for more and more transport service by the railways at a time when the available railways' facilities were taxed to the utmost, and their renewal or expansion was impossible because of the inability to procure the necessary articles from the usual source of supply, British, Canadian, American or others.

On the other hand, because of dangers of overseas transportation, already mentioned, exports from India had fallen off. The heavy traffic in regard to agricultural commodities or other forms of raw materials, that formerly used to be exported, began to show a decline. Their movement, however, was not entirely eliminated, as indigenous industry was growing in proportion; and that needed food, fuel, and raw materials no less acutely than in the pre-war importing countries. The actual cost of moving, moreover, went on steadily increasing, as has been shown in the Introduction while discussing the ratio of working expenditure to the gross earnings of railways. Supply of fuel, stores and accessories for operating the service, all

became more and more costly, while labour increased both in number as well as in wages. Rates and fares were increased time and again; surcharges were levied; controls and rationing imposed. But all to no purpose. They only added to the volume of corruption already considerable in Railways ever since they came into being. A new consciousness grew amongst workers, which was not satisfied merely by higher wages or better working conditions. The importance of railways as an essential service came to be recognised by the worker who made an ever-rising demand for higher wages, lighter hours,—better amenities all round. The labour problem thus became acute and proved a weak spot in the armour of the authorities.

The Railway equipment showed more wear and tear, which had to be put up with because of the impossibility of replacement and renewal and much more so, of new construction at a time when the service was every day increasingly in demand. The rolling-stock and locomotives were all over-worked and over-aged; equipment stolen or sent away; accidents became more common and extending the facilities, as planned before the War, became unthinkable.

From the point of view of the travelling or commercial public the increasing demand for railway service was met by short supply and so brought its own nemesis. It became dearer in the War, and has continued to grow dearer even after the War has been over these three years and more. Rates and fares have been steadily increasing. During the War, because of the heavy military needs, the traffic receipts grew rapidly, and brought about a surplus, which was much more the result of increased traffic than increased rates and fares. But the surplus was illusory. Except for the portion of the traffic which was due to the American troops stationed in India, which was the principal base of operations for the War with Japan, and material and armament having to be moved for their use, the Railways' increased traffic receipts really came in a very large measure from the Defence Department and its associated subsidiary or connected services. It was, in fact, one pocket paying another. The surplus, therefore, as shown in the following Table must be taken to be artificial, —a matter of account keeping only. This is more than proved by the rapid shrinkage in that surplus after the departure of the Americans and the end of the War boom, notwithstanding the repeated increase in rates and fares in the post-war Railway Budgets.

Statement showing the comparison between the surplus, and the percentage of the net traffic receipts and interest charges to the capital charges for the ten years ending with 1946-47.

Year	Net Traffic Receipts	% of Net Traffic Receipts to Captial-at charge	Interest charges	% of Interest charges to Capital-at-charge	Surplus
1937-38	32,07	4.3	29,26	3.9	2,76
1938-39	30,44	4.0	29,30	3.9	1,37
1939-40	32,80	4.3	29,11	3.8	4,33
1940-41	46,29	6.1	28,68	3.8	18,46
1941-42	55,62	7.4	28,44	3.8	28,08
1942-43	71,22	9.1	28,04	3.6	45,07
1943-44	76,59	9.8	28,53	3.7	50,84
1944-45	74,10	9.4	27,45	3.5	49,89
1945-46	61,24	7.7	27,18	3.4	38,20
1946-47	31,70	3.9	26,52	3.3	8,57

Source :—Report by the Railway Board on Indian Railways for 1941-42 and 1946-47.

One consideration which the Railway Financier, like that of any monopolist industry or service, should recognise, is that, notwithstanding a monopoly, if one goes on adding to the charges, a time must inevitably come when further growth in traffic would be impossible. The Indian financier seems yet ignorant of this simple principle of monopoly trading, viz. the lower the charge the greater the turnover and so the greater the return. It is something more than a mere paradox that with lower charges, there will be more than proportionately greater use of the service, and, therefore, proportionately better results would be obtained. It is the experience of all countries where indirect taxation, or monopoly charges have been reduced, trade or traffic becomes stimulated and thereby increases more than proportionately the net gain at actually lower rates. In India Railway rates and fares have been increased more than 50 per cent between 1940-41

and 1948-49,—the last two years' increases being greater than all previous ones. Yet the net receipts are declining. All concessions are abolished; all ways of attracting or increasing traffic barred. The higher rates and fares are, therefore, in effect a concealed burden on the Railway owner,—the Government—who have to pay higher travelling allowances to their public servants as well as to the members of the public invited in conference, or sent on deputation, or becoming representatives in the Legislature. The Indian Railway Financier, however, it must be admitted, is unable to give effect to this principle, even if he realises it, partly because he cannot to-day provide for the much wider use of the service that would result if the rates and fares were reduced to prewar levels and concessions restored. He has not the larger rolling stock and more efficient locomotives, which would be needed if the traffic is to be stimulated. There are not adequate terminal facilities, nor duplication of track, nor other equipment required to improve the service and so increase traffic receipts. Until these handicaps are removed, the financier must continue to add to the rates and fares, and keep down the traffic rather than increase it. Increasing costs of stores and fuel and labour are also responsible in a considerable measure for diminishing returns on railways; while the growth of corruption and inefficiency, which is responsible for heavy loss of revenue, is but very faintly reflected in the loss due to Ticketless travel which alone is said to cost Rs. 8 crores a year in the last Budget (1948-49).

The War had made a considerable drain of Railway officers in earlier years for technical War work in other departments. But the pressure of railway work consequent on increased traffic, both military and public, did not permit of unlimited release of such officers. To meet the war requirement and replace those deputed to other Departments, and to provide staff for increased work, a certain number of senior officers were granted extension and temporary officers were also employed. Non-gazetted staff, with technical qualifications, continued to be released for service in the Supply and War Departments. Railways also rendered assistance to the Labour Department scheme for training technicians for war service either overseas or in India. Substantial amounts were granted as bonus at one day's pay for each completed month of continuous employment, from the 3rd September, 1939 to end of hosti-

lities for temporary non-gazetted staff employed in railway workshops, engaged wholly or in part on munitions production, subject to certain conditions. Special pay was also sanctioned to non-gazetted supervisory staff employed in Mechanical Workshops up to 10 per cent of pay of each such employee, or Rs. 50 per month whichever is less, if such staff work in excess of an average of 54 hours per week.

Following the Central Standards Office for Railways undertaking responsibility for arrangement for supply of the Defence Department requirements of locomotives and rolling stock for war purposes in India and overseas, a War Section was created in the Standards Office from August 1941. The demands for locomotives and rolling stock for the Defence Department for overseas included over 200 metre gauge locomotives, 8,300 metre gauge goods wagons, over 1,500 standard gauge (4'—8½") goods wagons, standard gauge and metre gauge ambulance trains, and miscellaneous coaching stock and certain narrow gauge locomotives and wagons, as well as broadgauge military cars, Kitchen cars and broad gauge and metre gauge ambulance trains. All metre gauge locomotives had to be converted to oil fuel burning prior to despatch, and 70 per cent of the metre gauge and standard gauge wagons stock dismantled and packed for shipment to conserve shipping space. Wagons had also to be strengthened to carry heavy armoured fighting vehicles.

Railways after the Partition

As a result of the decision to partition two important Railways the N.W. and the B.A. had to be divided between Pakistan and India, following the definition of the boundaries by the Radcliffe Boundary Commission. The portion of the N. W. Railway traversing Jullundur, Amballa, Ludhiana and all Eastern Punjab districts, parts of Amritsar and Ferozpore districts and of the Delhi Province, are formed into the Eastern Punjab Railway, administered by the Chief Administrative officer, E.P. Railway, functioning as its General Manager. Similarly a certain portion of Eastern Bengal Railway (broad gauge) and a considerable portion of the old Assam-Bengal Railway (metre-gauge), have been allotted to Pakistan. The residual portions of these two railways have been merged partly with the O.T. and E.I. Railways and the metre-gauge line traversing the north of the Brahamaputra Valley which

lies in India is now renamed the Assam Railway nistered by the General Manager for that Railway.

1948-49 Budget

The Table below shows the principal figures budget estimates for 1948-49 :—

(in lakh of rupees)

Gross Traffic Receipts :—	19,000	Miscellaneo Transactio	
Working Expenses		Receipts	
Ordinary working expenses	1,47,15	Expenditure	
Appropriation to Depreciation Reserve Fund	11,18	B. Net Misc. Receipts :—	
Payments to Worked Lines	1,45	Net Rly. Rev. (A plus B).	
Total Working Expenses	1,59,78	Interest Charg	
A. Net Traffic Receipts	30,22	Net Surplus	

As to the allocation of this surplus, a Comm three was appointed to review the convention of 19 lating the Railways' contribution to the General I

Workshop Position

Of the total number of locomotives India po bout a third are over age, and they are being rep apidly as the producers can supply and shipping available.

There are two elements of importance in co with the workshops, viz. the availability of spar and efficiency of labour as measured by output. Tl been a perceptible improvement in the delivery o for spare parts from the United Kingdom; and tl parts are being increasingly produced in Indian

Labour.

On practically all principal Railways, there was an improvement in the number of man-days worked in the workshops. But the quantum of work done during the prescribed period is considerably lower. We must devise sufficient administrative machinery automatically to secure that each labourer renders his full quota of work; and secure effective co-operation from Labour Organisations to ensure continued efficiency. Considerable Labour unrest with threats of strike, notwithstanding repeated and substantial concessions, have prevented Railways from regaining financial surplus. The unchecked increase in the price-level prevents the concessions made from being as effective and substantial as was estimated originally.

Notwithstanding all this, the Transport Minister considered the prospects for 1948-49 likely to show a marked improvement by March 1949, due to considerable improvement in line capacity and marshalling capacity.

Additional rolling stock is expected to be produced in 1948-49, i.e. 4,050 general service waggons, plus 150, besides oil-tank waggons from Canada. Other waggons numbering about 177 are also scheduled to be delivered by the end of 1949. All of which comes to a total of over 4,000 waggons. Even if all these are not produced as per schedule it is possible to put on the lines at least 2,000 additional waggons during 1948-49, which would make a perceptible improvement. As regards passenger traffic the great grievance of over crowding in trains is due to increase in the number of persons travelling (100 p.c.) and decrease (14.7 p.c.) in the number of coaches available. It was expected, however, that in 1948-49 there would be between 700 to 800 more coaches available, 300 being newly ordered, and about 400 returned by the Defence Ministry. Similarly 146 new locomotives are expected to be delivered in the course of 1948, which would materially ease the situation. The shipping position, too, is likely to show improvement and so it may be possible to divert in 1948-49 to the sea route some of the heavy traffic from Calcutta to Bombay which now goes by rail. But with all this the Transport Minister did not expect normalcy being achieved in less than three years.

Railway Rates Tribunal

There was a proposal to set up a Railway Rates Tribunal by the 1st of April 1948. On examination it was

found that unless this Tribunal was vested with statutory authority it would not be able to function in the way in which it ought to. A Bill would accordingly be placed before the Legislature for the purpose of setting up a Tribunal with a much wider scope than the present Rates Advisory Committee, with a mandatory and not merely an advisory jurisdiction.

Railway Convention Committee

This Committee in an Interim Report recommended :

(i) An immediate enquiry as to what additional appropriation if any, should be made to the Railway Depreciation Fund during the war as an emergency provision; and

(ii) a comprehensive enquiry into the lives of the assets, including obsolescence, and the consequent normal rate of contribution to the Depreciation Fund, and any other matters, such as the level of prices affecting the Fund.

As a result of the former enquiry, undertaken during 1943-44, the Committee decided that an additional appropriation of Rs. 2 crores a year should be made to the Depreciation Fund in 1943-44 and 1944-45; and that this additional appropriation should continue so long as the war conditions lasted. The arrears of contribution of Rs. 6 crores for the previous three years should be spread over three years, if the general budgetary position permitted. This was done in the budget for the year 1944-45.

The Committee also recommended that, until the Convention is revised, the then rate of contribution to the Depreciation Fund should not be reduced. In order to place Railways on a sound financial footing, the Committee further recommended that the Appropriation to the Railway Reserve should be the maximum consistent with a fair allocation to general revenues, as determined from year to year by the general budgetary situation arising out of the present emergency. The contribution to the General Revenues was recommended to be fixed at Rs. 4.5 crores which has been adopted since 1944-45.

The Depreciation Committee 1944 were asked to suggest any alterations in the normal lives of assets laid down

in the existing Depreciation Fund rules, which they found necessary; and to report on the condition of assets, overdue replacement by reason of their age or their condition, and of assets likely to be due replacement before 1st April 1950.

Unexpected difficulties prevented this Committee from functioning. The information required was not readily available; and it was found that its compilation would throw on Railway Administrations excessive work impossible during the war without detriment to their other and more important duties.

Economies in Railway Working

The Inglis-Appleton Mission appointed, during the War, had recommended many ways of improving and economy in railway working. Government had accepted their recommendations, and action was taken. The following steps were taken :—

(1) To speed up trains by curtailing time allowances for watering and engine duties, improving water columns and other watering facilities, laying down yard-sticks to test staff efficiency through the Bedaux Efficiency Organisation, opening of additional crossing stations, etc.

(2) Re-modelling certain Locomotive Yards to improve lay-out, and re-sitting of certain ash-pits and turn-tables.

(3) Ordering additional cranes.

(4) Sunday unloading of wagons in Military Depots.

(5) Analysis of the various waters for locomotive usage and installation of water conditioning plants on some railways.

(6) Ordering additional break-down cranes.

(7) Obtaining locomotives and rolling stock from India and abroad.

(8) Adopting a comprehensive scheme to provide for installation of many additional Section Control Circuits, Administrative Telephone Circuits, Phantom Telegraph Channels, and additional Telegraph Circuits.

(9) Re-modelling Yards to remove bottle-necks and provide extra accommodation.

Plan for Railway Extension and Development

Under the impetus of the Planning and Development Department, the Reconstruction Committee of the Council in its Second Report summarised the aims and objects of planning as applied to Railways.

Until the Post-War Plans of the Government in regard to Trade, Commerce, Industrial development, Agriculture, Forestry, Education, Roads and Road Transport, etc., mature, it is not possible to estimate even approximately the full extent of the improvements and general development which would be needed on railways to keep pace with other postwar development. All that can be and is being done is to prepare a plan for reconstruction on a basis which is practical enough to be put into execution without an excessive strain on the finances of the Government and which would place railways in a position from which the basic plan could be enlarged or adjusted to keep pace with the post-war schemes being planned by the Government.

Post-War Planning For Railways

As in other sectors of the country's economic life, considerable interest has grown up in regard to planned development of Railways. There are many schemes involving heavy outlay. The Railway post-war plan, provides both for rehabilitation and development. Railways were unavoidably accumulating arrears in regard to renewals and maintenance of their assets, as all available resources had to be concentrated to winning the war. The aggregate estimated cost of 5 years' development was given at Rs. 230 crores. Some of the important developments incorporated in the railway plan were :—

(1) **Construction of new lines and replacement of lines dismantled during the War**—Considerable extensions of railway mileage (about 5,000 miles) has been planned to open up all suitable areas, with railways assisting actively the development of the country. This would include a direct line to Assam as well as a strategic line through the Rann of Cutch. Some of the railway lines which were dismantled during the

war, would have to be restored. During the year considerable attention was paid to the consultations necessary to formulate a plan for the requirement of new lines and replacement of dismantled ones.

(2) **Electrification of Railways**—The advantages of electrification in speed and rapid turn over are now well known. Electrification in Railways would help substantially to conserve coal, which may be used to speed up all round industrialisation. Certain general principles have been formulated so that schemes for electrification might be examined in detail. The scheme to electrify the B. B. & C. I. Railway upto Ahmedabad has actually been referred to consulting Engineers.

(3) **Reduction in the number of classes in the post-war passenger trains**—It has been decided to provide only three classes on Indian railways in the post-war period, beginning with January 1949. These classes would correspond approximately to the present Second, Inter and Third classes. Railways would, however ,provide in addition to these three classes, air-conditioned coaches on important mail and trans-provincial trains. It is not clear what gains are expected from this change which may fall unnecessarily harshly on the Middle class.

(4) **Amenities for passengers**—The post-war plan provides for a considerable increase in the amenities available to the Third class passengers, with a new, more roomy and better equipped carriage.

(5) **Quarters for railway staff**—An important part of the new development on Railways is the provision of a large number of Staff Quarters, especially for those with salary below Rs. 100 p.m. An **ad hoc** Committee was appointed to consult the staff and their wives and determine the room arrangements and improvements required.

This Housing Committee reported in 1946 on :—

(i) the accommodation and amenities needed in the quarters designed for the several classes of railway employees,

(ii) the classes of staff to be housed,

(iii) the basis of rent charge, and the financial return to be expected after consideration of all factors and,

(iv) the improvements in existing quarters reported to be below the standard prescribed for new quarters in regard to light, sanitation, accommodation etc.

Six designs of quarters for different categories of staff according to their pay and status were recommended, indicating their respective cost.

These recommendations are still under the Board's consideration, who have accepted in principle the standard of accommodation recommended with certain adjustments to reduce costs.

Electrification of railways around Calcutta to reorganise and improve facilities is part of these plans. A Committee,—"The Calcutta Terminal Facilities Committee, 1947"—was set up under Sir P. Ginwala as Chairman.

(1) "To consider and report upon the adequacy of the present rail terminal facilities in Calcutta both for coaching and goods traffic;

(2) To make recommendations for the provision of such additional or alternative facilities as may be necessary adequately to handle the present and prospective traffic, the Committee to assume that Calcutta suburban passenger services and the E.I.R. upto Dhanbad, will be electrified.

(3) To recommend what additional rail construction, if any, should be undertaken in the urban area;

(4) To give approximate estimates of cost of the various schemes recommended; and

(5) To suggest division of cost between the Railways and any other authorities concerned with such schemes.

Other developmental schemes are :—

1. Rehabilitation, repair, and replacement of locomotives, have been subjected to abnormal wear and tear, or wagons, coaches, track and other equipment which whose renewal has fallen into arrears as a result of the War.

2. Establishment of workshops for the manufacture of locomotives, boilers and other railway equipment in India. Plans are in hand for commencing the manufacture of locomotive boilers as soon as possible during the war and of complete locomotives as soon as practicable after the war.

3. Absorption of demobilised army personnel in railway services.

4. A programme of annual replacements of engines, wagons, coaches, workshop machinery and other equipment, spread uniformly over a number of years, so as to assist materially the industries established or to be established in the country.

5. Improved services for goods, parcels and passenger traffic.

6. Regrouping of railways.—The existing grouping will be reviewed in the light of State ownership so as to make such adjustments in territorial boundaries as would appear to be desirable and to provide for joint running powers where required.

7. Extension of activities of railways to other transport services road, air, etc., either through actual operation or by securing an interest in existing services. Co-ordination between railways and other forms of transport will be attempted with the cooperation of Provinces and States. The question of the use of railway bridges by M. T. or the construction of new combined bridges for road and rail will also be considered on the merits of each case.

8. Evolution of a new rates structure in keeping with the post-war requirements of the country as a whole.

The Plan for Railway extension, development and economy is summarised in the following tables, with special reference to the financial aspect.

Under the basic plan now being worked out, railways will require, as shown in the statement on the next page an expenditure of Rs. 319 crores in the first seven years of the post-war period, out of which approximately Rs. 125

crores will have to be met out of the depreciation fund leaving about Rs. 194 crores to be financed out of the additional capital to be raised.

Post-war years	1st	2nd	3rd	4th	5th	6th	7th	Total in crores
A—Rehabilitation	10	15	20	20	20	20	20	125
B—Improvements—								
(i) Operative Improvements	1	4	8	8	8	8	8	45
(ii) Staff Welfare	3	5	8	8	8	8	8	48
C—3rd Class Amenities	1	4	8	8	8	8	8	45
D—Construction of new lines	1	5	10	10	10	10	10	56
crores	16	33	54	54	54	54	54	319

The programme planned above is for seven years as it is expected that the first year will cover the preparatory stage and that the target will not be reached till the third year of the post-war period. It is also expected that the expenditure out of the Depreciation Fund will not be less but may be considerably more in the succeeding seven or eight years. As the plans have not yet materialised and are only in an embryonic stage, the figures given in the statement above should be regarded as being only very approximate.

FIVE YEAR PLAN—RAILWAY DEPARTMENT.

(Cost in Lakhs of Rs.)

Brief Description.

I Sanctioned projects	Non recurring Expenditure			Total	Annual recurring Expenditure			Total
	New works		Replacement works.		Interest at 3.5%	Depreciation	Maintenance & operation.	
	Productive	Unproductive.						
New Lines-Restoration of Bhimsen Khairada line and construction of Rupar-Talaura line.	40	96	—	136	3.26	1.6	3.9	8.76
II. Other Schemes								
1. Individual Railway works programme—office buildings, staff quarters, stations, track, signalling system, improvement of workshops, fencing, amenities to passengers etc.	2949	11482	7455	21886	401.93	137.05	387.18	926.16
2. Other centrally co-ordinated schemes, research etc.		35	—	35	1.22	.6	.35	
3. Rolling stock	1600	—	3400	5000	—	—	—	2.17
	4589	11613	10855	27057	406.41	139.25	391.48	937

III. Inland Water Transport

A. Inland Water-ways*

Very material developments have taken place in regard to Water Transport, inland, coastal, and overseas in the last decade or so.

Inland Waterways had been practically choked by the development of Railways and the growth of mechanised Road Transport. Considerable new attention is now devoted to this subject as shown below :—

As noticed in the Introduction, before the Railway came to India, inland water transport was highly developed. The Railways proved fatal to this cheap, indigenous form, which has not progressed in parallel with rail and road development as in other countries, like France, Germany, or the U.S.A. Indifference, if not hostility, of the powers that be, and of a coordinating authority to maintain the waterways, and provide appropriate navigation facilities, coupled with the desire to utilise river water for irrigation, are mainly responsible for this state of affairs.

There are, parts of the country where river or canal navigation is still active. In Madras, the Godavari Canals, including the Dummagudan Canal, the Kistna Canals, the Buckingham Canal, the Kurnool-Cudappah Canal, the West Coast Canals & Vedaranniyam Canals, are important highways for water transport, which provides cheap and ready mode of access to all markets. Important water-ways are also found in East and West Bengal. Calcutta, the largest sea-port in India depends very considerably for its trade both ways upon its water-way communications. About 25 per cent, of the merchandise which flows into Calcutta from the rest of India is water-borne of which no less than 63 per cent. comes from Assam. About 32 per cent of the exports is carried by water, and of this 72 per cent.,—goes to Assam. The total inland water-borne traffic of Calcutta amounts to approximately 45,00,000 tons of which 34 per cent is carried by inland steamers and 66 per cent by country boats. In 1945, 1,04,00,000 passengers were carried by steamer service in East and West Bengal.

Altogether it has been estimated that the amount of boat traffic over Government maintained channels is in the

* Compiled from the Indian Year-Book 1948, p. 702.

neighbourhood of 250 million ton miles per annum; barely one per cent. of the prewar goods traffic by railway. It is therefore, obvious that as matters stand today inland water transport forms an insignificant proportion of the nation's transport services. But that cannot deny the tremendous scope for water-transport expansion which is available.

The total length of water-ways in undivided India with perennial streams is about 25,000 miles, comprising 10,000 miles of rivers and 15,000 miles of canals. Of the former, as many as 6,000 miles are navigable to a minimum of about three feet draught, and of these again about 5,000 miles are in the north-east of India comprising the Provinces of old Bengal and Assam. The canals are mostly for irrigation, but it is estimated that about 4,000 miles would be suitable for power-driven craft, and the remaining 11,000 could be utilised for boat traffic.

The Future.

The question of improving India's natural water-ways is receiving close attention of the local Governments. The Central Water-ways Irrigation and Navigation Commission is endeavouring to coordinate these efforts on a country-wide as well as multi-purpose basis. It is deplorable that in some areas navigation has been completely neglected for the overruling benefits of irrigation. Possible extension of navigation can only be realised by consideration of the multi-purpose use of our water wealth on a regional basis irrespective of political boundaries.

Conservation of water resources on a multi-purpose basis offers the following potential new navigable water-ways, or the resuscitation of old ones :—

1. **Bengal (East and West).**

   (a) A new canal to connect the coal-fields of Bengal and Bihar with the port of Calcutta.

   (b) Resuscitation of the Bhagirathi route to the Ganges.

   (c) Resuscitation of the inner boat route connecting Calcutta to East Bengal to shorten the existing route by 50 per cent.

   (d) Resuscitation of the river routes to North Bengal as visualised in the Tista Valley Project.

(e) Resuscitation of the old Brahmaputra and Dhalleshwari rivers in the Dacca and Mymensingh Diistricts.

II. **Assam**

Resuscitation of the Dihing, Dihu, Dhansiri and Kalung rivers in Upper Assam.

III. **Bihar**

(a) Resuscitation of the Gandak and Kosi series of rivers.

(b) Extension of navigation on the Sone River for about 150 miles as visualized in the Sone Valley Project.

IV. **United Provinces and Central India.**

(a) Resuscitation of the Gogra river which would afford navigation facilities up to Fyzabad as in former days.

(b) Flood Control on the Betwa and Chambal rivers holds promise of ample discharge in the dry season, to permit navigation on the Jumna from Ettawa to Allahabad, and on to Calcutta via the Ganges.

V. **Central Provinces.**

The Narmada and Tapti pass through the Central Provinces and a number of States before they join the Arabian Sea in the Bombay Presidency. Investigations are in progress to assess the value of these rivers for multi-purpose development including navigation.

VI. **Madras.**

Possible development of the Godavari, Pranhita, Wardha, and Wainganga rivers suggest other main lines of communication and taking into consideration the possible development of the Tapti river it may be found practicable to obtain a transcontinental line by connecting the Wardha and Tapti rivers.

VII. Orissa.

(a) The Orissa coastal canal between the Hooghly and Dhamra rivers, together with an extension of the Mahanadi delta system to link with the Madras Canal system would afford inland navigation from Assam to Madras.

(b) The Mahanadi Project visualises the provision of navigational facility on the Mahanadi river to Sambalpur about 300 miles from the sea.

VIII. **East Punjab, West Punjab, Sind.**

Resuscitation of the rivers Indus, Chenab and Sutlej would restore 26,000 miless of river communication to their former navigability, but the interests of established irrigation may stand in the way of reviving these communications to any extent.

These, when in full working order, will provide a good supplement to the roads and railways for heavy, long-distance traffic, which cannot bear high freight rates. The economics of Water Transport have been examined sufficiently in the Introduction to explain and justify this expectation.

IV. Coastal and Overseas Transport.

(B) As regards coastal and overseas transportation, right up to the eve of the World War II, practically all available traffic was monopolised by British and foreign shipping concerns. They had large fleets, wide connections and innumerable ways of guarding their monopoly. The small struggling Indian enterprise which had entered the field after World War I, was attempted to be throttled out of existence in the first years of its life, by the many and varied devices, such as Deferred rebate, Conference Lines Pooling etc. The British Government of India also encouraged those outside interests by such methods as postal mails subsidies, stores carriage, troops transport, and passage for Government servants on leave, deputation, or otherwise.

The Indian demand for abolition of some of these devices by legislation prohibiting them and reservations of at least coastal trade for ships owned, manned and con-

trolled by Indian enterprise, was at first strongly opposed and defeated, both by direct opposition of the interests concerned, as well as by the ill concealed apathy, if not hostility, of the powers that be. Cut throat competition of the most relentless character not succeeding in driving out the Indian shipowner from our own seas, the British concern offered to buy the Indian out on extravagant terms. The growing nationalism of the Indian business community defeated those moves; and the Indian concern continued to eke out an existence, at first with heavy losses, but later by crumbs being grudingly thrown from the overladen tables of the alien monopolist.

During the War, however, and because of the shortage of freight and the disproportionate increase of the traffic that followed in the wake of the War, the advantage of an adequate Indian Mercantile Marine were realised, if only to fill up the gap in such an emergency left by the foreign shipping. British ships were either destroyed in large numbers by mines or sub-marines; or diverted to more urgent services as auxiliaries to the Royal Navy, transport of troops, stores, equipment and armament to the theatres of the War and vice versa. Indian owned ships were also commandeered for such service and they suffered their proportion of loss through enemy action as much as their British competitors. With the growing consciousness of National self-sufficiency in the matter of such essential Public Utilities, there has been a greater and greater demand for increasing the aggregate Mercantile Marine, owned, manned and controlled by the Indians. For an effective foundation of this business, there is an equally intense demand to develop a ship-building industry in its modern form within the country. Without that industry there can be no hope of a real National Self-sufficiency or of any survival through the emergency of the nature and dimension which the last war displayed. The contribution of an adequate mercantile marine and its foundation in a suitable ship-building industry, to the naval strength of the country is equally incontestable.

Post-War Shipping Policy.

When planning became fashionable with the Government of India thanks to the driving urge of the War, they established a special Planning and Development Department of their own to consider the problem in a coordinated, comprehensive manner. A special Committee called the

Reconstruction Committee of the Council was appointed to deal with broad questions of policy as well as details of Development in given fields. The Second Report of that Committee deals with Transport, and on the question of shipping policy, it recommended :—

For a country of its size, the length of its coastline and its strategic position athwart one of the world's main sea routes, India possesses a distressingly small number of deep-sea ships. At the outbreak of war they numbered 30, of about 150,000 tons gross. The Government of India had, after years of opposition, pledged themselves to assist the development of Indian mercantile marine. But their action was limited to the establishment of the Training Ship "Dufferin", provision of special facilities for training Marine Engineers, and using Government's good offices to promote a settlement between the Indian and British companies operating on the Indian coast. In the last case the attempts made by India's National Government in 1947-48 have proved futile.

The vulnerability of India's position was cruelly revealed by the War particularly by her inability to find adequate shipping from her own resources to provide for the transport of the food supplies, required by her.

The acquisition of an adequate share in the world's carrying trade should be the aim of our post-war shipping policy, and to this end steps should be taken to secure for Indian shipping:—

(i) an increased share of the coastal trade, including trade with Ceylon and Burma. The share then available was estimated at between 20-30 per cent. But the legitimate demand of Indian Shipping cannot be satisfied with less than exclusive reservation of all coastal traffic for it.

(ii) a substantial share in the near trades, e.g. Persian Gulf, East Africa, Malaya, and Dutch East Indies; and

(iii) a fair share in the Eastern trades, especially where Japanese shipping would be dispossessed;

(iv) a fair share also in the trade between India and the U. K., Europe, and North America.

(v) Fullest utilisation of country craft must be ensured to give maximum relief to railways, and prevent wasteful competition with steamers.

The advent of National Independence in August, 1947 and the establishment of National Government in India has brought about a wholesome change in regard to our National Policy in this field. A ship-building yard, capable of building modern ocean-going vessels for cargo and passenger service, with reasonable speed, has been established at Vizagapatam. It was intended originally to meet Wartime needs but is now working to meet the commercial requirements. Though its capacity is very limited,—building about 2 ships of 8,000 tons each; and though the industrial background to supply parts, accessories, equipments etc., required for the modern steamship is also backward, it is a beginning which has a great promise.

Another development in the direction of attaining National Self-sufficiency in this vital matter is to be found in the resolve of the Indian Government to participate in the foreign trade shipping service by organising ocean carriage system, owned jointly by Government and private concerns already in the field. Arguments are being prepared to set up three such corporations with Government owning half the capital entitling them to a proportionate voice in framing the policy of the concerns. The day-to-day management will be entrusted to experienced Indian concerns who have weathered all storms of unrestricted competition and gained technical knowledge and administrative experience at their own cost. With a total shipping of some 2 million tons expected to be acquired or built in India, the ambition for India to take a fair share in the shipping business of the world and particularly her own overseas trade, does not seem to be ill-founded. For purposes of coastal trade, tonnage owned by Indians today is very small. It is to be replenished and increased by new purchases of ready made ships from abroad. The target for this is fixed at two million tons, which, however large in comparison with India's pre-war tonnage, is hardly adequate to meet all the needs of her coastline and the traffic passing along it. Nor is it very considerable in proportion to shipping owned and worked by other maritime countries in the world. There is now no need to apprehend that ruthless competition from vested foreign interests, as the device of licensing any carrier along the coasts of India,

which the Government of India have reserved to themselves, will more than suffice for the purpose. The old devices similarly, of Deferred Rebates, Conference Lines, Monopoly and Pooling traffic will be equally ineffective.

V. Port Development.

Apart from the major ports of Bombay, Calcutta, Madras, Cochin, Tuticorin, the Kathiawar ports, and Marmugao, practically all the minor ports are open roadsteads. Ships have to anchor there two miles or more from the shore. In normal times, these ports were used considerably by coastal and other steamers and countrycrafts. To cope with the increase of coastal shipping after the War, more harbours would have to be constructed or develop and modernise smaller ports.

For a proper development of Water-Transport both, inland and overseas,—terminal facilities, in the shape of ports and harbours, with adequate equipment for loading and unloading, storage and transport to and from the hinterland is indispensable.

In the plans that have been made so far, this item has occupied no insignificant place. A Port Development Committee, set up in February 1945, emphasised the importance of improving, and expanding and modernising the general facilities at the existing major ports to cope with all foreseeable traffic demands. Anti-slump projects of port development to be financed by interest-free loans from the Centre at the ports of Bombay, Cochin, Madras and Calcutta; and other improvement and development works, financed entirely by the port authorities themselves, whether from loans or otherwise, amounting in all to approximately Rs. 18 crores are also contemplated. These works will add considerably to the capacity of the major ports, estimated to be about 25 million tons imports and exports.

The Report of the Ports (Technical) Committee recommended major works at Vizagapatam, Madras, Bhatkal and Sika. Though the Port Development Committee estimated, the capacity of major ports, at about 25 million tons, as adequate for the anticipated traffic of 22,000,000 tons, immediately after the War, the Development Committee thought "that on the grounds of Defence and Strategic requirements of the country, and the industrial, agricultural and economic development, which is sure to take place in the near future, and also in view of the need for wider dis-

persal of port capacity throughout the country, a deep-sea port on the East Coast, where ships could safely enter at all times of the year and in all weather, is a great necessity."

Accordingly the task of developing Vizagapatam as a sheltered deep-sea port which can accommodate ships of at least up to 650 feet in length, with drafts up to 30 feet was accepted, and first priority to improvement at the entrance and construction of new cargo, oil and coal quays, and graving dock was granted.

Port Development after Partition.

Ports were neglected during the British regime as much in the interest of the Railways as because of the military requirements, which designed a particular layout and construction of railways and ports—their freights and charges—which made it impossible for more than a few ports to develop. The principal ports of Bombay, Calcutta and Madras still remain in the Indian Union and are flourishing, while Vizagapatam is a rapidly growing port and centre of ship-building industry. Cochin and two or three other ports on the West Coast are but insignificant remnants of innumerable harbours that studded the Eastern and Western Coasts of India in the days of the Vijaynagar Empire.

The Partition did not materially affect the scheme for Ports Development, except that two of the major ports,—Karachi and Chittagong have gone out of the Indian Union.

Considerations of a strategic character have necessitated the finding of new deep-water ports on the North West Coast of the Union of India. A Special Committee appointed in 1948 to make further investigations into the possibilities of new ports, have recommended the establishment of a Major Port at Kundla in Cutch, which is a Centrally administered area for reasons of National Defence. This Committee, called the "West Coast Major Ports Development Committee" has not yet finished its investigations. It is possible that it may recommend other ports as well to strengthen the naval defence of the country, as also to provide additional commercial outlets for the country's produce.

VI. Air Transport.

In no section of the Transport Service have developments been so rapid, so many, and so pregnant with consequence. Air Transport was almost in its infancy when the Sub-Committee presented its Report to the National Planning Committee, and the latter took its decisions on the same. Since 1940, however, the War has revolutionised the plane, its speed and carrying capacity. The number of routes covered, mileage flown, passengers and cargo carried, landing grounds, weather reports and stations, safety devices, navigational instruments, all have multiplied in geometric progression. A brief summary of these is given at the end of this Section, in so far as it affects India. Particular attention is devoted to the growth of the air-craft making industry, training personnel and developing the service by landing facilities, aerodromes and other aids to this form of Transport.

Aircraft Manufacture

The intense war demand for aircraft forced the Government of India to explore possibilities of aircraft manufacture in India. The Hindustan Aircraft Company was established by Mr. Walchand Hirachand, doyen of Indian Transport enterprise, with a capital of Rs. 45 lakhs and a factory was established in Bangalore. The Government of India and of Mysore were from the start equal partners in this enterprise, each contributing Rs. 25 lakhs. American technicians were also associated as advisors in the concern. With the advent of the system of Lend Lease in 1942, it was found undesirable to have any element of private enterprise in this concern of vital importance to the conduct of the War in Asia; and so the Government of India bought out, at a heavy premium, their private partner, and took over the entire management in their own hands.

India's first plane came out for test flight in July, 1941. The aircraft assembled in India was the Harlow, a low-winged, single-engined monoplane with the same characteristics as modern fighters and bombers.

In March 1946 the United Kingdom Aircraft Mission visited India, and in accordance with their recommendation the Government of India decided to establish a National Aircraft Industry in India, with a 20-year target of com-

plete self-sufficiency, for building aircraft needed for the Royal Indian Air Force, as well as for civil aviation.

The British Mission made an intensive survey of the potentialities for the manufacture or aircraft and its ancillary products, visiting aircraft repair and maintenance factories at Barrackpore, Poona and Bangalore as well as the Ordnance factories at Cawnpore, Cossipore and Jubbulpore. They recommended that aircraft production should initially, be started in the Bangalore factory, the only working aircraft unit, with the longest experience of aircraft-work, and the greatest number of staff and operatives experienced in working as a team on aircraft production. It had designed, produced and flown an entirely original prototype glider. Research and training facilities were also available close by at the Indian Institute of Science at Bangalore. As in the early years, demand for aircraft, would be relatively small in India only one factory was recommended in the first instance; later, production might be started at other centres.

The Mission could not present accurate estimates of the cost of setting up this industry, until the final programme of production was decided upon. Having regard to the assets already available in the Bangalore factory and the probable production programme, they thought an extra expenditure of Rs. 13 lakhs would meet all the requirements for plant for the next five years. This does not include the heavy capital expenditure needed for engine development. But on this point the Mission did not consider themselves fully competent to report. The matter is therefore, being separately examined.

On the basis of their present calculations the Mission did not consider the running cost to the taxpayer of their scheme, for the first five years, need exceed Rs. 130 lakhs, the net additional cost over and above what India would have paid if the aircraft were purchased overseas. Against this is the fact that India would have the nucleus of an aircraft industry of her own including trainers, technicians, and designers,—an invaluable asset in moments of national emergency.

On the Mission's recommendations it was decided to constitute a Board of Directors including three Technical Expert Directors, one of whom was to be the Managing Director and the other the Technical Director and the

third the Works Director. These may be imported in the first instance from Britain, while the fourth, a Finance Director may be an Indian. These would be whole-time executives. An essential part of the Plan is to train Indians for filling such posts. The other Directors will be part-time officers, consisting of the Director-General of Civil Aviation, or other expert representative of Government's aviation interests, a representive of the Industries and Supplies Department, a nominee of the Mysore Government (if they still retain a financial interest in the factory) and two Indian Industrialists. The Mission felt that the association in this manner, of private industrialists, who had rendered important service during the war, would serve the wider national interest. They attached particular importance, even at the initial stage to designing aircraft, as only by this means would the necessary confidence and skill be obtained by Indian Staff. Government have accordingly decided that the design of an original prototype aeroplane, specifically suited to Indian conditions, should be taken up immediately. A detailed report was also made on aspects of technical training, technical staff, and labour. They considered the facilities available at Bangalore promising and suggested ways and means for their development and co-ordination with the requirements of the industry.

Trainer Aircraft.

Government have decided that steps should be taken forthwith for the production of trainer aircraft required for the R.I.A.F. It is anticipated that the first aircraft will come out of the Indian factory in less than 18 months from now.

The size of Hindustan Aircraft Ltd., makes some complementary manufacture, side by side with aircraft production, desirable during the first quinquennium. The Railway Department have agreed to place orders for manufacture of coaches for the next five years, subject to the type and price being found satisfactory. Their first order will be for 100 coaches, which will probably be the maximum yearly capacity of the factory.

Parachute Manufacture

The possibility of making complete parachutes in India was investigated at the instance of the Supply Department. Materials and facilities for manufacture

being available, a special factory for the fabrication of parachutes was put up about the middle of 1942, and is now in full production. India's filature silk reeling capacity in Madras, Mysore, and Bengal—is being multiplied by a scheme with capital cost of Rs. 18,50,000 provided by the British Government to effect a change-over from hand-reeling to machine-reeling methods. This is worked partly as a Government concern, partly as a State controlled village cooperative enterprise, partly through private producer aided by State loans.

While the industry is thus a promising development in all its departments, the Service is not yet an economic proposition. We have considered in the Introduction the economics of Air Transport and there reached conclusions, which, unless satisfied, will continue to make air transportation a luxury and even so a losing proposition for the operator. Needless to add the service is entirely a private enterprise, there is lack of proper coordination—the several alternative forms of Transport working each for itself. The military importance of this service is also not sufficiently realised.

This rather lengthy review of the developments which have taken place so far in regard to Air Craft Industry and Air Transport Service, technical training of personnel, and fundamental Research in the basic science, will suffice to show that real, comprehensive planning seems to have been adopted at least in this branch of transport. Its coordination with other forms of Transport has yet to be achieved, and so also the allocation of available traffic. The recognition of the utility of Air Force in War time and for the normal defence of the country, has been sufficiently keen to admit of such varied and large-scale development in this branch. The progress, however, though considerable, is not commensurate yet with the size of the country and its population, as also the country's potentialities of all-round development. As remarked already, Air Transport is still a luxury service too costly for ordinary use. But the Researches are now going on, and the rapid increase in the number of machines as well as trained personnel already being achieved promises to revolutionise the economics of Air Transport, so that in no distant future, this form of Transport will take its proper place in the planned economy of the country.

Some interesting statistics of the traffic carried by Indian air services, scheduled and non-scheduled, during 1946 and 1947 are given below :—

Particulars	1946	1947
A. **Scheduled Services.**		
Miles flown	4,520,046	9,361,673
Number of passengers carried	105,251	260,209
Mail carried in lbs	1,026,403	1,404,050
Freight carried in lbs	1,318,153	6,140,172
Capacity Ton-Miles operated	8,536,457	18,596,778
Load Factor	74.8 p.c.	79.4 p.c.
Regularity (per cent of the number of services operated to number of services scheduled)	96.8 p.c.	97.3 p.c.
B. **Non-Scheduled Flights**		
Miles flown	509,495	3,804,737

Source :—Indian Year-Book 1948, p. 672.

Nationalisation

A Civil Aviation Conference was held on the 1st February, 1947, to obtain the views of the various parties concerned on the subject of nationalisation of air services, which had previously been debated in the Legislative Assembly. No final decision was, however, made.

The following year, also, the question was referred to the Standing Advisory Committee for Communications, who advised a beginning be made by Government undertaking the operation of one route themselves as an experimental measure in order to gain operating experience. The final policy is not yet decided.

As a consequence of the Partition of the country on August 15, 1947, a sudden demand was made upon the operating Companies to provide aircraft for evacuating refugees from Western Pakistan to India, as also for the transport of personnel and material to Kashmir to deal with the situation arising from tribal attacks on the State. The operating Companies fully co-operated in providing machines and crews for these operations, and established

their claim to a definite place in the economic organisation of the country.

External Air Services.

The question of India starting her own external air services to other countries had occupied Government's attention ever since the end of the War. The first concrete step was taken only about the end of 1947, when a scheme was approved to establish an Indian air service between India and the United Kingdom. A new company was formed for this purpose under the name of Air-India International Ltd. The Government of India hold 49 per cent. of the share capital with an option to increase this to 51 per cent. at any time. On the Board of Directors of this company, Government have their own nominee as a "Special Director", who has certain over-riding powers. During an initial period of five years any losses incurred by this company will be made good by Government; but any payment so made must be repaid out of subsequent profits made by the company.

The India-United Kingdom Service, equipped with the most modern type of Lock-heed Constellation, 40-seater aircraft, commenced operation on June 8, 1948 on the route Bombay-Cairo-Geneva-London. A weekly service to begin with, it is now operating twice a week and gets almost always a full complement of mails and passengers.

As a result of bilateral air transport agreements, negotiated with various countries, foreign air services passing through India have largely increased in number. At the present time services to and across India are operated by Pan-American Airways, Trans-World Air Lines, British Overseas Airways Corporation, Air-France, K.L.M. Quantas Empire Airways, Swedish Airways and China National Aviation Corporation. Different routes are served by each and in the aggregate they provide a fairly close and steady communications both for East and West. Iran, Afghanistan, South Africa are likely soon to be linked up in this net work.

Aerodromes.

In 1939 there were only 12 civil aerodromes in India with adequate staff and other necessary facilities. During the war, the Defence Department took over the control of all civil aerodromes, and the services of all Air Traffic Con-

trol Officers were loaned to the Air Forces. Rapid development took place, and so at the end of the War there were several hundred aerodromes and 2000 yard paved runways. Gradual transfer of the aerodromes and staff to civil aviation began in 1945.

The post-war plan, of development was framed before the partition. It was proposed to develop 4 International, 10 Major, 32 Intermediate, and 57 Minor aerodromes in India. Because of the Partition, these plans had to be materially modified. Under the revised scheme there will be 3 International, 7 Major, 13 Intermediate, and 22 Minor aerodromes in the Indian Dominion. Except 14, mostly Minor aerodromes, all these are staffed and equipped to deal with aircraft operations. Besides, there are 20 aerodromes in the various Indian States which have acceded to India.

Since partition, Bombay Airport (Santa Cruz) has become the first port of entry from the West for the Indian Dominion, and is to be considerably enlarged with customs, immigration, and health facilities. To meet the demands of the increasing International air traffic on the East, considerable expansion of the Dum Dum airport at Calcutta is planned.

Night Lighting

24 aerodromes are at present equipped for night flying operations. The night flying equipment in use at some of the stations at present is of the emergency type consisting of paraffin flares, lanterns and slim lamps, Portable electric flare paths are provided at two stations, and it is proposed to acquire more of these sets to be installed at other stations. Permanent electric runway lighting, taxiway lighting, and approach lighting, etc., are being provided at all the Major and International airports.

Operations

At the close of war, the Civil Aviation Department took over by stages operational control of a number of aerodromes, including those originally belonging to it. The technique of Air Traffic Control was developed to a very high standard during the War to ensure safety of aircraft operations. Air Traffic Control was brought under three heads namely, Area Control, Approach Control, and Airfield or Local Control. Of these, with a view to minimising

the staff, Approach and Local Controls have for the present, been combined together. Area Control Centres have been established at Delhi, Calcutta, Bombay and Madras.

Navigational Aids

Thirty-seven Aeronautical Communications Stations—25 of which are operated by the Director-General of Civil Aviation, and 12 by Airline Operating Companies on an agency basis—have been established by Government.

On an average, there are at present seven Navigational Aids and sven Air|Ground Communication Channels, available at the International airports, in conformity with the pattern laid down by International Civil Aviation Organisation. These aids will be further augmented by installation of up-to-date methods of Instrument Landing System, Ground Control Approach System, Air|Ground Control Radar, at all International airports. Long-range navigational aids have also been planned for Bombay, Calcutta and Madras, giving coverage to an aircraft flying over the sea. At other airfields, almost all the navigational aids and aircraft communication channels, recommended by the International Civil Aviation Organisation, have been provided. In addition, facilities exist for point to point communication on both radio telegraphy and telephony between the adjacent airfields and also between the International airfields, which will be further expanded to improve communication between the stations in India and between the International airports in India with those in the adjacent countries.

There are three important ancillary units within the Communication Organisation of the Civil Aviation Department, known as Radio Construction Unit, Radio Stores Depot, and Radio Development Unit. New installations and major repairs are carried out by the Construction Unit. Radio Stores Depot is the central stores responsible for distribution of all equipment to the stations. Radio Development Unit, started in January, 1948, is engaged in carrying out research and development work on Aeronautical Communication problems.

Air Training

Facilities exist in the aeronautical communication service for the training of operating and technical personnel at the Civil Aviation Training Centre, Saharanpur.

During 1947, 350 aviators were trained here. It is also proposed to start Flying and Air Traffic Controllers Schools at Allahabad, and an Engineering School at Barrackpore to train Commercial Pilots, Aerodrome Officers, Control Operators and Ground Engineers, in the near future. About 280 Commercial Pilots, 300 Aerodrome Officers, 300 Control Operators and 300 Ground Engineers, are expected to be trained in the first 5 years. A handbook entitled "AERADIO" giving details of radio facilities and many other useful information was compiled and published. A Communications Consultative Committee was formed at the end of 1946 to facilitate exchange of ideas and co-ordinate the requirements of Airline Operating Companies with regard to Navigational Aids and Communication facilities in Civil Aviation.

Details are also being finalised for the establishment of an Indian Aeronautical Society for the advancement of Aeronautical Science and Engineering.

Flying Clubs.

There are seven subsidised Flying Clubs and three non-subsidised which provide facilities for ordinary citizens to learn to fly at concessional rates, and also give flying training for commercial aviation. Three more are to be opened and subsidised, viz. Northern India Flying Club, at Jullundur, the C. P. and Berar Flying Club at Nagpur, and a Club at Gauhati, Assam. During 1947-48, these Clubs carried out 18,112 hours of flying. During 1948-49, it is proposed to encourage Gliding activities by subsidizing the Indian Gliding Association Ltd., Poona.

Aeronautical Maps.

The preparations of a series of aeronautical maps on the scale of 1|1,000,000 has been undertaken by the Survey of India. Hitherto, there have been two series of general maps in this scale, namely the "Carte Internationale" Series and the "India and Adjacent Countries" Series. To facilitate the work of keeping the maps up-to-date, it was decided to concentrate on "Carte Internationale" Series only. Government have also undertaken to print aeronautical maps covering Indian territory conforming to the I.C.A.O. recommendations.

India has also entered into bilateral air transport agreements with U.S.A., Netherlands, France and

Sweden. Agreements with Pakistan and Switzerland have also been finalised. Negotiations are in progress for the conclusion of a bilateral air transport agreement with U.K.

Manufacture.

On the conclusion of the war with Japan in 1945, the Factory was re-organised under the Ministry of Industries and Supply for the conversion and overhaul of Army Dakotas to be used for Civil Aviation. It is now engaged on the conversion and overhaul work both for Civil Aviation and the Air Forces, with a programme of assembling and manufacturing of Trainer Aircraft for the Air Force. Government intend to develop this Factory into a manufacturing concern.

A limited liability Company called Portsmouth Aviation Company. Nawanagar is in the course of being established at Sika in Nawanagar State. It is a sister Company of Portsmouth Aviation Limited, England. The principal product of the Company will be the assembly and manufacture of an all-metal twin-engined 5 seater aircraft called the "Aero-Car", suitable for feeder line communication, executive travel, or air-ambulance work. The Aero-car aeroplane will be first assembled in India from parts fabricated in U. K. and later on manufactured in India in stages. The company is going to set-up an Aero-Engine overhaul Shop backed up by a Machine Shop. To begin with the key technical personnel will be obtained from U.K. but it is expected the Company will be completely Indianised in a few years.

Several other Aero-material and parts are now being manufactured by private Companies in India, and approved for this purpose by the Director General of Civil Aviation in India, after proper inspection and test according to British or American standards. Some of the articles manufactured are as follows :

Aero-Almunium Sheets, Aero-Tyres and Tubes, Aircraft Solders, Wooden Airscrews produced by the Forest Research Institute, Dehra Dun, Aircraft Gaskets, Plywood Products, Aeroplane Cotton Fabric etc.

Research

Research and development work in Aeronautics is still in its infancy in India. The pressing need for it has not been felt so far since aircraft operations in this country

in the past have been of limited scope and the aircraft industry remained in an undeveloped state. The position has changed today and aircraft design and manufacturing activities have been started in Hindustan Aircraft Limited and elsewhere. The necessity has therefore arisen for initiating research on advanced problems of aircraft design, for developing materials of indigenous origin, and for the introduction of advanced aeronautical engineering training in Universities and technical institutions. Recent advances in civil air transport design and practice have also brought in their wake complicated problems relating to air-worthiness and safety in operations. A small Research and Development Organisation was created in April, 1946. It is mainly concerned with engineering problems relating to modification and repair of aircraft, operational problems concerning aircraft performance at various aerodromes, development and use of Indian materials for aircraft construction, advice on advanced aeronautical education and training, the encouragement of fundamental research in aeronautics, and the formation of an aeronautical society for the advancement and diffusion of knowledge of aeronautical science.

A post-graduate course in aeronautical engineering was introduced in the Indian Institute of Science, Bangalore, in December, 1942. This Department of Aeronautics is equipped with a wind tunnel subsidised by Government, and apparatus for structural research. The Institute will be the centre of fundamental aeronautical research in the country.

It is proposed to establish a research laboratory under the aegis of the Civil Aviation Department, where practical problems of particular interest to Civil Aviation will be investigated. There are several problems of tropical operations, such as temperature accountability in aircraft performance, power plant protection, development of special safety devices, the evaluation of the effects of turbulence, etc. which could advantageously be investigated in the research laboratory with a view to ensuring greater safety in operations. The research laboratory will also be engaged in certain aspects of civil aircraft design development work, and will eventually have to undertake the examination of "prototype" aircraft for purposes of type certification.

Considerable progress in original aircraft design work is being made at Hindustan Aircraft Limited, Bangalore. Advances in this field will require a research and development establishment organised on the lines of the Royal Aircraft Establishment in England. The proposed research laboratory of the Civil Aviation Department is intended to serve as the nucleus around which future aeronautical research and development activities may grow in such manner as to be of maximum benefit to the aircraft industry for evolving original aircraft designs and for developing and perfecting the methods of fabrication.

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